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NSY LONG BEACH
SSIC NO. 5090.3.A
VOLUMES I THROUGH IV
OF VI
FOLDER 1 OF 2

FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 1 of 6

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

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EXECUTIVE SUMMARY

This report presents the results of preliminary assessment (PA) and sampling activities performed by CDM Federal Programs Corporation (CDM Federal) for 171 Group B Areas of Concern (AOCs) at the former Long Beach Naval Shipyard (LBNSY), Long Beach, California. These activities were conducted for the United States (U.S.) Department of the Navy (Navy) Southwest Division Naval Facilities Engineering Command (SWDIV) under Contract N68711-96-D-2029, Delivery Order 014.

The *Environmental Baseline Survey* (EBS) conducted for LBNSY (LBNSY-Environmental Division [ED] 1996a) identified 304 locations where hazardous materials or hazardous waste were potentially stored and/or released. Of these 304 AOCs (formerly known as Points of Interest [POIs]), 122 were identified in 1996 as the Group A POIs that required no further action (LBNSY-Environmental Division [ED] 1997a). The remaining 182 AOCs were collectively called the Group B AOCs, of which 25 were evaluated under an expedited PA. The remaining 157 Group B AOCs, an additional 9 AOCs (identified during October 1998), and 5 more AOCs (identified during January 1999) are categorized in Table ES-1. Findings for the 171 AOCs are presented in this report.

Table ES-1
171 Nonexpedited Group B AOCs

Total	Type of Site	Designation
100	Satellite Accumulation Points	SAP
10	Process Tank Sites	PT
9	Hazardous Waste Facilities	HWF
8	Underground Storage Tank Sites	UST
8	Miscellaneous Sites	MISC
7	Historical Sites	HIST
7	Industrial Wastewater System Sites	IWS
4	Sanitary Sewer Sites	SSS
4	Polychlorinated Biphenyl Sites	PCB
14	Miscellaneous New Sites Added	ADD

The objectives of this PA were as follows:

- Gather available historical and current information on 171 AOCs identified at LBNSY;
- Assess whether or not hazardous materials or wastes associated with each AOC may have impacted surface and subsurface soils, groundwater, selected building floor surfaces, waste liquids remaining in sumps, and sediment; and

- Assess whether or not further action is warranted. If further action is warranted, make recommendations for what type of action should be implemented.

The tasks performed to evaluate each AOC were the following:

- Conducting a site reconnaissance that consisted of visiting each site, observing current conditions (e.g., buildings and paved areas, stained soils or pavement, and stressed vegetation), and photographing the site;
- Reviewing available historical documents such as the EBS, hazardous materials use records, industrial waste generation and discharge studies, spill logs, spill contingency plans, contamination studies, cleanup reports, and pollution prevention plans maintained in LBNSY and SWDIV files;
- Reviewing historical aerial photographs and maps from the 1940s to 1990s; and
- Interviewing former and current employees who are knowledgeable of past LBNSY environmental and operational practices.

Based on initial PA findings, medium-specific sampling and laboratory analysis were conducted at 35 AOCs to further enable their evaluation. Analytical results were compared to applicable regulatory and background screening criteria. If criteria were not exceeded, no further action was recommended. If criteria were exceeded, further action for an AOC (additional site characterization or removal of contaminated media) was recommended.

All PA and sampling activities were conducted according to the data quality objectives and methodologies presented in the Work Plan (CDM Federal 1998a) and Work Plan Addendum No. 2 (CDM Federal 1999). (Note: Work Plan Addendum Number 1 addressed 25 expedited AOCs and the results were presented in a separate report [CDM Federal 1998d]). The field methods used during this PA were selected to provide a screening-level assessment of the presence or absence of AOC-related contamination in soil, groundwater, selected building surfaces, waste liquids, and sediment. Field investigation methodologies include the following: selection of sampling locations; subsurface utility detection; concrete coring; soil sampling; lithologic logging; depth-discrete groundwater sampling; waste liquid sampling; wood block sampling; PCB wipe sampling; sample labeling, handling, and management; decontamination; investigation-derived waste (IDW) management; land surveying; and laboratory analysis.

The conclusions and recommendations based upon the PA records search, site reconnaissance, and personnel interviews detailed in Section 4 are summarized below and in Figure ES-1.

The following 126 AOCs were recommended for No Further Action based on information from the PA investigation:

- All 100 satellite accumulation point (SAP) AOCs;
- All four sanitary sewer system (SSS) AOCs;
- Seven hazardous waste facility (HWF) AOCs;
- The former incinerator at Building 163 (AOC HIST 4);
- Two reported plate abrasive blasting locations (AOCs HIST 6 and HIST 7);
- The concrete block floors at Building 130 (AOC MISC 3);
- The removed polychlorinated biphenyl (PCB) equipment at Building 132 (AOC PCB 18);
- Six underground storage tank (UST) AOCs;
- A can crushing unit (AOC ADD 1);
- Coolant recovery tanks at Building 132 (AOC ADD 2);
- A sandblast pit/conveyor system at Building 173 (AOC ADD 10); and
- Mercury manometers (AOC ADD 11).

Ten AOCs were placed into the existing Compliance Program. Two of these ten AOCs consist of sites awaiting regulatory approval for closure:

- Building 314 Treatment, Storage, and Disposal Facility (TSDF) (AOC HWF 2); and
- Bilge and Oily Wastewater Treatment System (BOWTS) (AOC IWS 3).

The other eight AOCs that will be addressed in the Compliance Program, and for which action was planned for 1999 and 2000, include the following:

- Building 118 TSDF (AOC HWF 1);
- Industrial Waste Treatment Plant (IWTP) and pipelines (AOCs IWS 2 and IWS 1, respectively);
- Liquid Industrial Waste (LIW) Tanks (AOC IWS 4), where the pipelines connecting the LIW tanks to both the IWTP and sanitary sewer must be capped;
- Three oil/water separators (OWSs) (AOCs IWS 5, IWS 6, and IWS 7); and
- The Shipyard Gasoline Station (AOC MISC 7).

Thirty-five AOCs were recommended for sampling for various reasons including evidence of leaks, spills, or staining of the floor; the types and amounts of hazardous materials/waste used

in operations; and/or insufficient information about the operations conducted. The sampling and analysis results are summarized in Table 5-1.

Figure ES-1 summarizes the recommendations made for the sites, while Figure ES-2 shows the locations of AOCs that are recommended for further action. No Further Action is recommended at 27 of the 35 AOCs because no sampling results exceeded screening criteria. Two AOCs will be addressed under the Compliance Program (AOC UST 2 and AOC MISC 8). The following bullets describe the findings and recommendations for the six sites recommended for Further Action:

Dispose of Soil/Sediment as Hazardous Waste

- Surface soil in the Building 128 Dirt Floor area (AOC MISC 5) contained three metals (arsenic, chromium, and lead) above soil industrial preliminary remediation goals (PRGs) and background levels, so the soil should be removed and disposed as hazardous waste. A dirt floor sample collected in this area as part of the investigation of quench tanks (AOC PT 10) identified dioxins and furans above the industrial PRG. The dirt floor in this area is approximately 4 inches thick; approximately 40 cubic yards of surface soil exist in the heat treatment/forging dirt floor area.
- Soil beneath a cooling platform (sampled as part of AOC MISC 1) twenty feet west of the heat treatment/forging dirt floor area also exceeded soil industrial PRGs and background levels for two metals (arsenic and chromium) and should be disposed of as hazardous waste.
- Further Action is recommended for the Mercury Pump Stand location south of Building 104 (AOC ADD 13). The sediment located within the spill pan, the bermed area sump (including associated liquid), and the nearby storm drain catch basin should be removed and disposed of as hazardous waste.
- Further Action is recommended for the Mercury Pump Stand location south of Building 150 (AOC ADD 14). The sediment located within the spill pans, the bermed area and sump (sediment and associated liquid), and the nearby storm drain catch basin should be removed and disposed of as hazardous waste.

Dispose of Liquid as Hazardous Waste

- Liquid waste at the Building 210 Plating Shop (AOC PT 1) is considered hazardous because of its concentration of the chlorinated solvent carbon tetrachloride and should be pumped out and disposed as hazardous waste. This liquid waste is situated below the concrete floor of the Plating Shop but above the concrete floor of the ventilation duct system. Because it is possible that the concrete floor might have absorbed contaminants, any future deconstruction

activities that involve removal of the concrete floor should take this into consideration.

Perform Site Characterization

- Further Action in the form of additional site characterization is recommended at the Building 128 quench tanks (AOC PT 10) because of the detection of mercury and BEHP in groundwater above screening criteria.

  The exact source of BEHP from quench oil tank processes is unknown. Semivolatile organic compound (SVOC) analysis was performed to detect polynuclear aromatic hydrocarbons (PAHs) associated with quench oils, not because phthalates were expected (there are no records indicating the use or generation of phthalates). BEHP is a common laboratory contaminant, but typically not at the concentration reported in one groundwater sample at this AOC (0.110 mg/L compared to the Ocean Plan criterion of 0.0035 mg/L). Further site characterization is recommended, consisting of collection and analysis of four groundwater samples via direct push sampling, one approximately 5 to 10 feet away in each of the four directions from the previous sampling location. Soil samples should be collected at each groundwater sampling location at a depth of five feet below ground surface. Samples should be analyzed for mercury and SVOCs.

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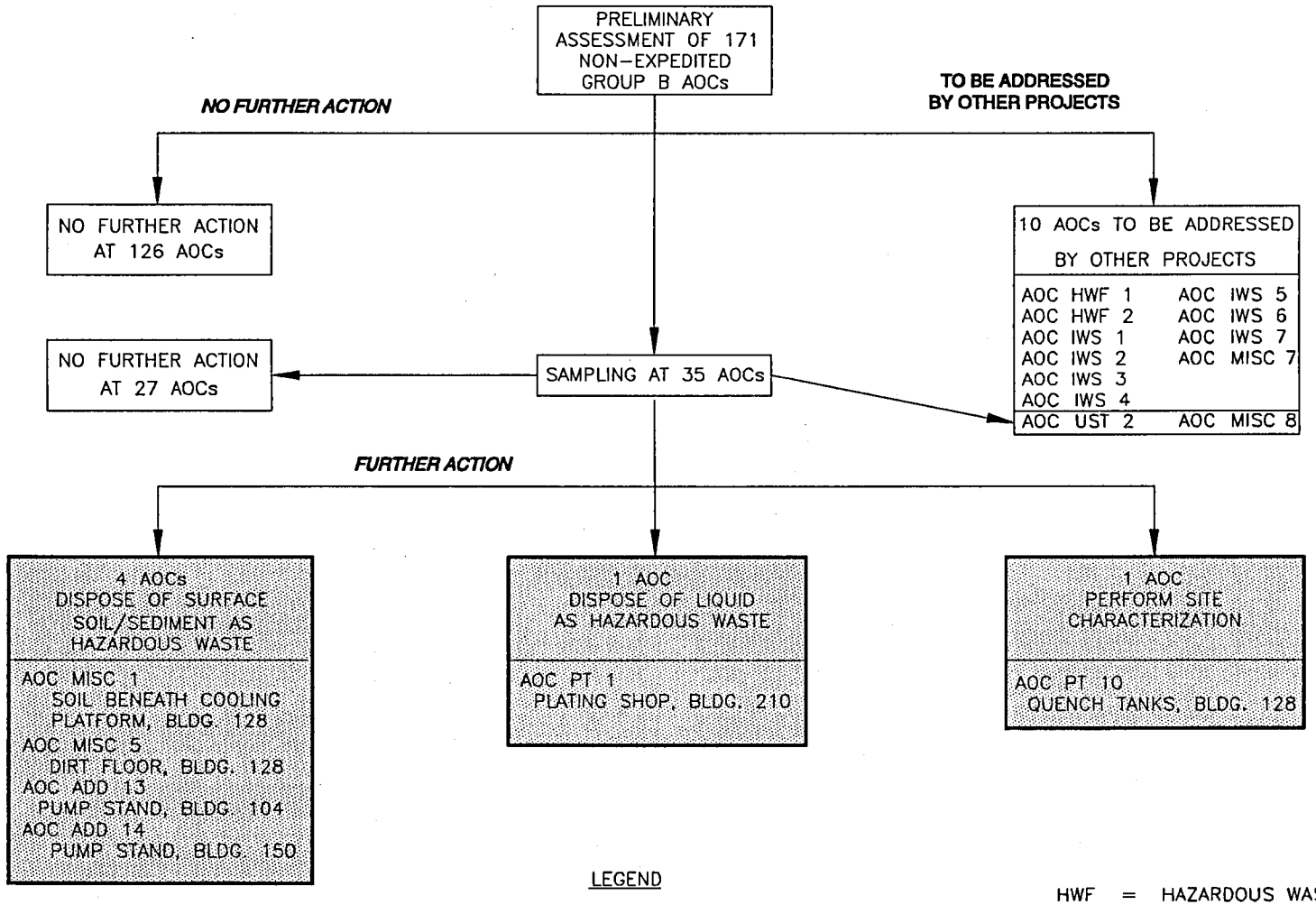

LEGEND

AOC	=	AREA OF CONCERN	HWF	=	HAZARDOUS WASTE FACILITY
ADD	=	ADDITIONAL	IWS	=	INDUSTRIAL WASTEWATER SYSTEM
BLDG.	=	BUILDING	PT	=	PROCESS TANK
HIST	=	HISTORICAL	MISC	=	MISCELLANEOUS
			UST	=	UNDERGROUND STORAGE TANK

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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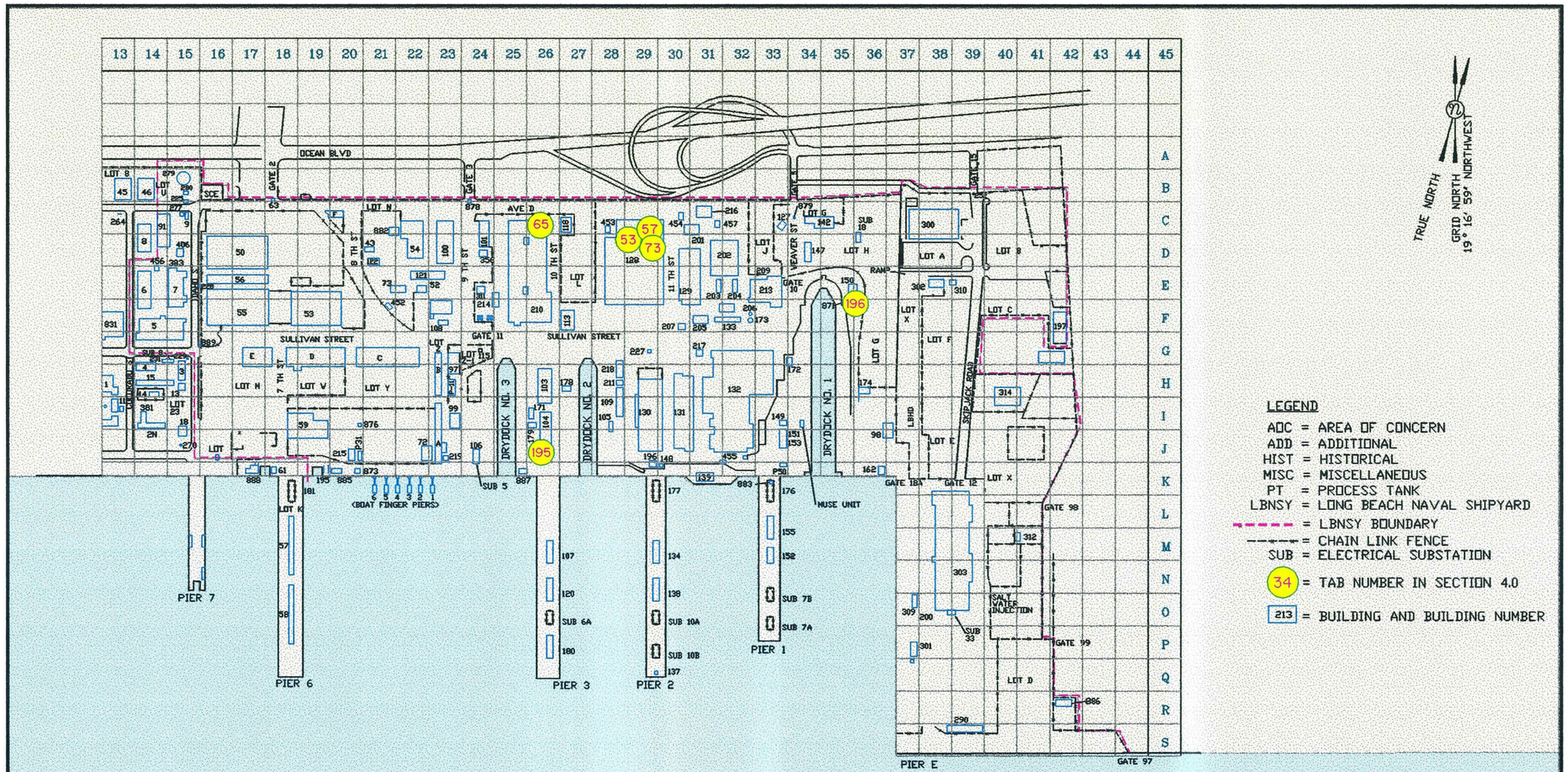
DATE: 5/2000
FN: ES-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SUMMARY OF RECOMMENDATIONS FOR 171 NON-EXPEDITED GROUP B AREAS OF CONCERN

FIGURE
ES-1

L-SB



SECTION 4

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57	MISC 5	DIRT FLOOR-FOUNDRY/HEAT TREATMENT AREA, BUILDING 128
65	PT 1	PLATING SHOP, BUILDING 210
73	PT 10	QUENCH TANKS, BUILDING 128
195	ADD 13	MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 104
196	ADD 14	MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 150

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 2/00
FN: ES-2
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PROJECT NO. 6210-014

NON-EXPEDITED GROUP B AREAS OF CONCERN RECOMMENDED FOR FURTHER ACTION

GROUP B AREAS OF CONCERN

FIGURE ES-2

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADD	Additional
AOC	Area of Concern
AOPC	Area of Potential Concern
APCL	Applied Physics and Chemistry Laboratory
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
B.	Building
BBP	Butyl Benzyl Phthalate
BCP	Base Realignment and Closure (BRAC) Cleanup Plan
BEHP	Bis (2-ethylhexyl) phthalate
bgs	Below Ground Surface
Bldg.	Building
BNI	Bechtel National Incorporated
BOWTS	Bilge and Oily Wastewater Treatment System
BRAC	Base Realignment and Closure
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
C	Carbon
C	Celsius
CA	California
CaC_2	Calcium Carbide
CaO	Calcium Oxide
$Ca(OH)_2$	Calcium Hydroxide (Hydrated Lime)
C_2H_2	Acetylene
CDD	Chlorinated Dibenzodioxin
CDF	Chlorinated Dibenzofuran
CDM Federal	CDM Federal Programs Corporation
CDM Inc.	Camp, Dresser & Mckee Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
cm	Centimeter
cm^2	Centimeters Squared
CN	Cyanide
CO	Carbon Monoxide
COC	Chain-of-Custody
COPC	Chemical of Potential Concern
Cr^{+6}	Hexavalent Chromium
CRW	Chromate Waste
CUPA	Certified Unified Program Agency

DAF	Dissolved Air Flotation
DC	Direct Current
DCA	Dichloroethane
DCE	Dichloroethylene
DEP	Diethyl Phthalate
DO	Delivery Order
DOD	Department of Defense
DOP	Di-n-octyl phthalate
DPT	Direct Push Technology
DRMO	Defense Reutilization and Marketing Organization
DTSC	(California) Department of Toxic Substances Control
EBS	Environmental Baseline Survey
ED	(LBNSY) Environmental Division
EDD	Electronic Data Deliverable
EFD-SW	Engineering Field Division, Southwest
EM	Electromagnetic
EPA	(U.S.) Environmental Protection Agency
ESI	Environmental Services, Inc.
EV	Electron Volts
F	Fahrenheit
FSP	Field Sampling Plan
FTU	Fixed Treatment Unit
FWS	Fish and Wildlife Service
GPR	Ground Penetrating Radar
HCl	Hydrochloric Acid
HIST	Historical
HLA	Harding Lawson Associates
H_2O	Water
HWF	Hazardous Waste Facility
ID	Identification
IDW	Investigation-Derived Waste
IR	Installation Restoration
IWS	Industrial Wastewater System
IWTP	Industrial Wastewater Treatment Plant

J	Estimated Concentration
LA	Los Angeles
LBNC	Long Beach Naval Complex
LBNSY	Long Beach Naval Shipyard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LDC	Laboratory Data Consultants
LIFOC	Lease in Furtherance of Conveyance
LIW	Liquid Industrial Wastewater
MCL	Maximum Contaminant Level
mgd	Million Gallons Per Day
mg/kg	Milligrams Per Kilogram
mg/L	Milligrams per Liter
MISC	Miscellaneous
ml	Milliliter
MLLW	Mean Lower Low Water
mph	Miles Per Hour
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSL	Mean Sea Level
MTBE	Methyl Tertiary Butyl Ether
MW	Miscellaneous Waste
N	Analyte Identity Uncertain
NA	Not Available
N/A	Not Applicable
NAVCOM	Naval Facilities Engineering Command
NAVSTA	Naval Station Long Beach
NAVY	U.S. Department of the Navy
ND	Not Detected
No.	Number
NEDTS	Navy Environmental Data Transfer Standards
NEESA	Naval Energy and Environmental Support Activity
NEX	Naval Exchange
NFA	No Further Action
NFESC	Naval Facilities Engineering Service Center
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NR	Not Reported

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

O	Octa
OD	Outer Diameter
OVM	Organic Vapor Meter
OWS	Oil/Water Separator
PA	Preliminary Assessment
PAH	Polynuclear Aromatic Hydrocarbon
PBR	Permit By Rule
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene (i.e., tetrachloroethylene)
PCW	Phenol/Cyanide Waste
pers. comm.	Personal Communication
POI	Point of Interest
POLB	Port of Long Beach
PPE	Personal Protective Equipment
ppm	Parts Per Million
PRG	Preliminary Remediation Goal
PT	Process Tank
PVC	Polyvinyl Chloride
PW	(LBNSY) Public Works (Department)
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
R	Rejected Data
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RWQCB	Regional Water Quality Control Board
SAP	Satellite Accumulation Point
SCAPS	Site Characterization and Analysis Penetrometer System
SGI	Supplemental Groundwater Investigation
SPCC	Spill Prevention Control and Counter Measures
SOP	Standard Operating Procedure
SSS	Sanitary Sewer System
STLC	Soluble Threshold Limit Concentration
SVOCs	Semivolatile Organic Compounds
SWDIV	Southwest Division Naval Facilities Engineering Command

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

T	Temporary
TCA	Trichloroethane
TCDD	Tetrachlorodibenzo dioxins
TCDF	Tetrachlorodibenzofuran
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TEF	Toxicity Equivalency Factor
TEG	Transglobal Environmental Geochemistry
TIWTP	Terminal Island Wastewater Treatment Plant
TPH	Total Petroleum Hydrocarbons
TPH-g	Total Petroleum Hydrocarbons, Gasoline
TPH-d	Total Petroleum Hydrocarbons, Diesel
TPH-o	Total Petroleum Hydrocarbons, Oil
TRPH	Total Recoverable Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facility
ug	Micrograms
ug/100cm^2	Micrograms per 100 Square Centimeters
U	Undetected
URSGWC	URS Greiner Woodward Clyde
U.S.	United States
USA	Underground Services Alert
USCS	Unified Soil Classification System
UST	Underground Storage Tank
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WESTDIV	Western Division, Naval Facilities Engineering Command
WET	Waste Extraction Test

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1.0 INTRODUCTION

This report presents the results of preliminary assessment (PA) and sampling activities performed by CDM Federal Programs Corporation (CDM Federal) for 171 Group B Areas of Concern (AOCs) at the former Long Beach Naval Shipyard (LBNSY), Long Beach, California (Figure 1-1). These activities were conducted between January 1998 and May 1999 for the United States (U.S.) Department of the Navy (Navy) Southwest Division Naval Facilities Engineering Command (SWDIV) under Contract N68711-96-D-2029, Delivery Order (D.O.) 014.

1.1 PURPOSE AND SCOPE

The overall purpose of the PA and sampling activities was to evaluate available information for each of 171 Group B AOCs at LBNSY and to determine a recommendation for either no further action or further action regarding environmental contamination. Available information for each AOC consisted of historical and operational data and recent site reconnaissance results.

Based on initial PA findings, medium-specific sampling and laboratory analysis were conducted at 35 AOCs to advance their evaluation. Analytical results for each AOC were compared to applicable regulatory screening criteria. If criteria were not exceeded, no further action is recommended. If criteria were exceeded, further action for an AOC (additional site characterization or removal of contaminated media) is recommended.

All PA and sampling activities were conducted according to the data quality objectives and methodologies presented in the Work Plan (CDM Federal 1998a) and Work Plan Addendum No. 2 (CDM Federal 1999). The Work Plan and Work Plan Addendum No. 2, both of which underwent regulatory review and approval prior to implementation, were developed in accordance with three documents. These documents are the *Navy/Marine Corps Installation Restoration Manual* (Naval Facilities Engineering Command [NAVFACENGCOM] 1997), *Base Realignment and Closure (BRAC) Cleanup Plan Guidebook* (with September 1996 revisions) (Department of Defense [DOD] 1995), and *Guidance for Performing Preliminary Assessments under CERCLA* (United States Environmental Protection Agency [U.S. EPA] 1991).

The LBNSY is currently not listed as a National Priorities List (NPL) Site by the U.S. EPA; thus, investigation of the 171 AOCs addressed in this report is not subject to the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the CERCLA-required Hazard Ranking System was not implemented.

1.2 PREVIOUS INVESTIGATIONS

Remedial investigations of fourteen Navy-designated Installation Restoration (IR) Program sites at the Long Beach Naval Complex (LBNC) were conducted by Bechtel National, Incorporated (BNI) and Jacobs Engineering in the early to mid-1990s. The purpose of the IR Program is to identify, assess, characterize, and clean up or control contamination at DOD facilities from past hazardous waste disposal operations and/or hazardous materials spills. The Navy conducted an Environmental Baseline Survey (EBS) for remaining (non-IR) sites at the LBNSY in November 1996. The EBS was conducted to evaluate site-specific environmental conditions and to identify sites suitable for transfer from the Navy to the City of Long Beach (LBNSY-Environmental Division [ED] 1996a). During development of the EBS, 304 sites were identified as Points of Interest (POIs) (currently referred to as AOCs) where hazardous substances were previously or currently used and/or stored (SWDIV 1998). The EBS divided these 304 AOCs into two groups, Groups A and B (LBNSY-ED 1996a), as described below and indicated in Figure 1-2.

Group A includes 122 AOCs that were considered likely candidates for a recommendation of "no further action" based on visual inspections, documentation reviews, and interviews with LBNSY personnel. A PA was conducted for these Group A AOCs in 1996 and 1997a and the findings were presented in the Final PA Report in April 1997 (LBNSY-ED 1997a). Regulatory agency concurrence for the recommendation of no further action at these 122 Group A AOCs was obtained in June 1997.

Group B includes the remaining 182 AOCs. These AOCs are sites that were still in use by LBNSY as of 1996 and closed sites deemed more complex and meriting further investigation. Fourteen more AOCs were identified by regulatory agencies and added to Group B from September 1998 through January 1999, bringing the total to 196 Group B AOCs.

In early 1998, the Navy designated 25 of the 196 Group B AOCs for expedited property transfer and directed CDM Federal to conduct an expedited PA for these AOCs. The expedited PA findings were presented in a PA Report dated June 1998 (CDM Federal 1998b) and included recommendations of further action (sampling and analysis) for 9 AOCs and no further action for 16 AOCs (CDM Federal 1998b). Regulatory agency concurrence for no further action at the 16 AOCs was obtained in June 1998. The results of the recommended sampling and analysis for the other 9 AOCs were presented in a sampling report dated November 1998 (CDM Federal 1998d). The remaining 171 AOCs (non-expedited property transfer sites) are the subject of this report. These sites are listed in Table 1-1 and their locations are indicated on Figure 1-3.

1.3 SUMMARY OF ACTIVITIES

From January 1998 to March 1999, PA and sampling activities were conducted for 171 non-expedited Group B AOCs. PA activities began with a review of available historical and

operational documents archived at LBNSY, hazardous materials use records, spill logs, permits, cleanup reports, aerial photographs, maps, engineering plans, and reports documenting past and ongoing environmental investigations. A visual site inspection was subsequently conducted at each AOC, along with personnel interviews. Figure 1-4 presents a flow chart with steps involved in performing the PA for the 171 Group B AOCs.

Medium-specific sampling was conducted at 35 of the 171 AOCs to further evaluate the possible impact of suspected chemicals of potential concern (COPCs). Sampled media varied from site to site and included surface and subsurface soils, groundwater, selected building floor surfaces, waste liquids remaining in sumps, and sediment. Collected samples were submitted to an off-site laboratory for selected analyses, including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals (including hexavalent chromium and cyanide), polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), dioxins and furans, and pH.

Analytical results were compared to applicable regulatory screening criteria (Appendix A) and facility background metals levels (Appendix L) for site-specific evaluation of COPC detections and determination of recommendations (i.e., no further action or further action).

1.4 REPORT ORGANIZATION

This PA and sampling report is organized as follows:

Section 1.0: Introduction. This section discusses the project purpose and scope, previous investigations, PA and sampling activities, and report organization.

Section 2.0: Background. This section discusses the LBNSY facility location and history, environmental setting, and contaminant transport pathways.

Section 3.0: Investigational Methodologies. This section summarizes the PA and sampling activities implemented to investigate the AOCs.

Section 4.0: Areas of Concern Descriptions and Findings. This section discusses each AOC and presents AOC-specific data and significant findings.

Section 5.0: Conclusions and Recommendations. This section summarizes the findings and presents conclusions and recommendations for each AOC.

Section 6.0: References. This section presents references of work cited in this report.

Appendices. The following are included in this report:

Appendix A	Screening Criteria
Appendix B	Spill Log
Appendix C	Satellite Accumulation Points (SAPs) Information
Appendix D	Historical Aerial Photographs
Appendix E	Historical Maps
Appendix F	Tank Closure Letters
Appendix G	Lithologic Logs
Appendix H	Investigation-Derived Waste (IDW) Inventory
Appendix I	Land Surveying Results
Appendix J	Field Quality Control (QC) Sample Results
Appendix K	Sampling and Analysis Matrix
Appendix L	Background Metals Concentrations
Appendix M	Relevant Historical Documents Excerpts
Appendix N	Regulatory Site Walk Meeting Minutes and Regulatory Comments and Responses
Appendix O	Data Validation Reports
Appendix P	1999 Port of Long Beach (POLB) Sampling Report for Three AOCs

Table 1-1
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
Note: Site Numbers 1 through 25 were addressed in 1998 in separate PA and Sampling Reports (CDM Federal 1998b, d).				
26	SSS 2	None	C-23	Sewer Pit H
27	SSS 3	None	G-24	Sewer Pit B
28	SSS 4	None	C-33	Sewer Pit G
29	SSS 5	207	F-31	Sewage Holding Tanks near Building 207
30	HWF 1	118	C-27	Former Treatment, Storage, and Disposal Facility, Building 118
31	HWF 2	314	H-40, I-40	Treatment, Storage, and Disposal Facility, Building 314
32	HWF 4	54	D-22	Less Than 90-Day Hazardous Waste Facility, Building 54
33	HWF 6	311	E-24	Less Than 90-Day Hazardous Waste Facility, Building 311
34	HWF 7	452	F-21	Less Than 90-Day Hazardous Waste Facility, Building 452
35	HWF 9	454	C-30	Less Than 90-Day Hazardous Waste Facility, Building 454
36	HWF 10	455	J-31, J-32 K-31, K-32	Less Than 90-Day Hazardous Waste Facility, Building 455
37	HWF 12	886	R-42	Less Than 90-Day Hazardous Waste Facility, Building 886
38	HWF 13	54	D-22	Less Than 180-Day Hazardous Waste Facility, Building 54
39	HIST 1	None	A to S-37, -42	Former and Current Oil Production Areas
40	HIST 2	51	C-21	Acetylene Generating Plant and Sludge Pit
41	HIST 4	163	E-36, F-36	Former Incinerator, Building 163
42	HIST 6	125	C-30, C-31	Plate Abrasive Blasting, Former Building 125
43	HIST 7	125	E-25	Plate Abrasive Blasting
44	HIST 8	None	E-27, E-28, F-27, F-28	Chemical Cleaning Area
45	HIST 9	132	J-31	Storage Area for Scrap Metal and Oils
46	IWS 1	None	NA[b]	Industrial Wastewater Pipeline Systems
47	IWS 2	108	F-23	Industrial Wastewater Treatment Plant
48	IWS 3	None	K-32	Bilge and Oily Wastewater Treatment System (BOWTS)
49	IWS 4	None	E-34, G-26	Liquid Industrial Waste (LIW) Tanks
50	IWS 5	132	I-33	Oil/Water Separator and Clarifier and Tanks, Building 132
51	IWS 6	54	C-21, C-22 D-21, D-22	Oil/Water Separator and Clarifier, Building 54
52	IWS 7	210	E-26	Oil/Water Separator and Clarifier, Building 210
53	MISC 1	128	C to F-28 to-30	Wood Block Floors, Building 128
54	MISC 2	129	D-30,D-31 E-30, E-31	Wood Block Floors, Building 129
55	MISC 3	130	H to J-29, -30	Concrete Block Floors, Building 130
56	MISC 4	132	G to J-31, -32	Wood Block Floors, Building 132
57	MISC 5	128	C-29, D-29, C-30, D-30	Dirt Floor-Foundry/Heat Treatment Area, Building 128

Table 1-1 (continued)
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
58	MISC 6	129	D-31	Diesel Test Cell, Including USTs 129.3-129.9, Building 129
59	MISC 7	101	D-24	Shipyard Gas Station, Including USTs 356-362, 369-376 & 101.1-101.6
60	MISC 8	54	C to F-21, C to F-22	Transportation Facility Yard Associated with Building 54
61	PCB 16	130	H-29	Building 130, Ventilation Gasket Removal Area
62	PCB 17	132	I-31, J-31	Equipment #618444 Sump A and Sump B, Building 132
63	PCB 18	132	H-31 or I-31	Equipment #116076C, Building 132
64	PCB 20	130	H-29	Building 130, PCB SAPs
65	PT 1	210	C-26	Plating Shop, Building 210
66	PT 2	129	D-30	Plating Shop, Building 129
67	PT 3	205	F-31	Metal Cleaning/Plating Shop, Building 205
68	PT 4	132	I-32	Valve Cleaning/Plating Shop, Building 132
69	PT 5	132	I-31	Plating Shop, Building 132 Second Floor
70	PT 6	130	J-29, J-30	Sheet Metal Cleaning/Plating Shop, Building 130
71	PT 7	129	E-31, F-31	Cleaning Dip Tanks, Building 129
72	PT 8	132	G-31, G-32	Tin Dip Tanks, Building 132
73	PT 10	128	C-29, C-30, D-29, D-30	Quench Tanks, Building 128
74	PT 11	128	E-29	Plasma Arc Cutting Tank, Building 128
75	SAP 9	52	E-22	SAP for Empty Aerosol Cans (Paint)
76	SAP 10	52	E-22	SAP for X-Ray Film Development Waste
77	SAP 11	52	E-22	SAP for Empty Aerosol Cans, (Oil Base)
78	SAP 12	52	E-22	SAP for Empty Aerosol (Solvent Base)
79	SAP 13	52	E-22	SAP for Waste Flashlight Batteries
80	SAP 14	52	E-22	SAP for VP-30 Penetrant Rinse Water
81	SAP 15	52	E-22	SAP for X-Ray Film Processing Waste
82	SAP 16	54	C-22, D-22	SAP for Waste Grease
83	SAP 17	54	C-22, D-22	SAP for Recyclable Oil
84	SAP 18	54	C-22, D-22	SAP for Waste Solvent
85	SAP 19	54	C-22, D-22	SAP for Recyclable Antifreeze
86	SAP 20	54	C-22, D-22	SAP for Waste Fuel Filters
87	SAP 21	54	C-22, D-22	SAP for Waste Transmission Fluid
88	SAP 22	54	C-22, D-22	SAP for Recyclable Dirty Rags
89	SAP 23	54	D-21	SAP for Waste Stream Wash Rack Grease
90	SAP 25	128	C- to F-28 to-30	SAP for Empty Aerosol Penetrant, Lube Cans
91	SAP 26	128	C- to F-28 to-30	SAP for Waste Oil & Water
92	SAP 27	128	C- to F-28 to-30	SAP for Aerosol Cans (Solvent)

Table 1-1 (continued)
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
93	SAP 28	128	C- to F-28 to-30	SAP for Metal Dust
94	SAP 29	128	C- to F-28 to-30	SAP for Sandblast Grit
95	SAP 30	128	C- to F-28 to-30	SAP for Oily Rags
96	SAP 31	128	C- to F-28 to-30	SAP for Empty Aerosol Cans (Paint)
97	SAP 32	128	C- to F-28 to-30	SAP for Safe Step with Oil
98	SAP 33	128	C- to F-28 to-30	SAP for Oily Rags
99	SAP 34	128	C- to F-28 to-30	SAP for Floor Sweeping with Contaminated Metal Dust
100	SAP 35	128	C- to F-28 to-30	SAP for CM-100 Sludge (Dry)
101	SAP 36	128	C- to F-28 to-30	SAP for CM-100 Sludge (Dry)
102	SAP 37	128	C- to F-28 to-30	SAP for Used Glass Bead Dust (Sandblast)
103	SAP 38	128	C- to F-28 to-30	SAP for Exhaust Ventilation Debris
104	SAP 39	128	C- to F-28 to-30	SAP for Aerosol Cans (Oil Base)
105	SAP 40	128	C- to F-28 to-30	SAP for Exhaust Ventilation Debris
106	SAP 41	128	C- to F-28 to-30	SAP for Metal Slag
107	SAP 42	128	C- to F-28 to-30	SAP for Used Core Sand
108	SAP 43	128	C- to F-28 to-30	SAP for Used Absorbent
109	SAP 44	128	C- to F-28 to-30	SAP for Aerosol Cans (Paint)
110	SAP 45	129	D-31, E-31	SAP for Oily Absorbent Pads
111	SAP 46	129	D-31, E-31	SAP for Hydraulic Oil
112	SAP 47	129	D-31, E-31	SAP for Oily Rags
113	SAP 48	129	D-31, E-31	SAP for Oily Rags
114	SAP 49	129	D-31, E-31	SAP for Lubricating Oil
115	SAP 50	129	D-31, E-31	SAP for Oily Absorbent Pads
116	SAP 51	129	D-31, E-31	SAP for Waste Sandblast Grit
117	SAP 52	129	D-30,D-31 E-30, E-31	SAP for Hydraulic Oil 2110TH
118	SAP 53	129	D-30,D-31 E-30, E-31	SAP for Hydraulic Oil 2135TH
119	SAP 54	129	D-30,D-31 E-30, E-31	SAP for Lube Oil PE-30
120	SAP 55	129	D-30,D-31 E-30, E-31	SAP for Lube Oil 9250
121	SAP 56	129	D-30,D-31 E-30, E-31	SAP for Fyrquel Preservative
122	SAP 57	129	D-30,D-31 E-30, E-31	SAP for Lube Oil 80/90
123	SAP 58	129	D-30,D-31 E-30, E-31	SAP for Fyrquel Lubricant

Table 1-1 (continued)
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
124	SAP 59	129	D-30,D-31 E-30, E-31	SAP for Vacuum Pump Oil
125	SAP 60	129	D-30,D-31 E-30, E-31	SAP for Refrigeration Oil
126	SAP 61	130	H- to J-29, -30	SAP for Paint Waste
127	SAP 62	130	H- to J-29, -30	SAP for Absorbent Pads and Oily Rags
128	SAP 63	130	H- to J-29, -30	SAP for Empty Aerosol Lube Cans (Formula 202)
129	SAP 64	130	H- to J-29, -30	SAP for Hait Rags
130	SAP 65	130	H- to J-29, -30	SAP for Empty Aerosol-Paint Can (Layout Blue)
131	SAP 66	130	H- to J-29, -30	SAP for Plasma Arc Waste (Heavy Metals)
132	SAP 67	130	H- to J-29, -30	SAP for Blast-Off Rags (Caustic)
133	SAP 68	130	H- to J-29, -30	SAP for Butylacetate
134	SAP 74	132	G- to J-31, -32	SAP for Oily Rags
135	SAP 76	132	G- to J-31, -32	SAP for Oily Absorbent
136	SAP 78	132	G- to J-31, -32	SAP for Oily Absorbent
137	SAP 79	132	G- to J-31, -32	SAP for Waste Oil
138	SAP 80	132	G- to J-31, -32	SAP for Used Absorbent Pads
139	SAP 81	132	G- to J-31, -32	SAP for Oily Absorbent Socks
140	SAP 82	132	G- to J-31, -32	SAP for Grinding Swarf
141	SAP 83	132	G- to J-31, -32	SAP for Oily Rags
142	SAP 84	132	G- to J-31, -32	SAP for Waste Oil
143	SAP 85	132	G- to J-31, -32	SAP for Aerosol (Gas)
144	SAP 86	132	G- to J-31, -32	SAP for Absorbents
145	SAP 87	132	G- to J-31, -32	SAP for 1,1,1-Trichloroethane
146	SAP 88	132	G- to J-31, -32	SAP for Spent Alcohol
147	SAP 89	132	G- to J-31, -32	SAP for Glass Beads
148	SAP 90	132	G- to J-31, -32	SAP for Brazing Flux
149	SAP 91	132	G- to J-31, -32	SAP for Consumable Batteries
150	SAP 92	132	G- to J-31, -32	SAP for Asbestos Construction Materials
151	SAP 93	132	G- to J-31, -32	SAP for Electrode Slag Surfacing
152	SAP 94	132	G- to J-31, -32	SAP for Alkaline Batteries
153	SAP 95	132	G- to J-31, -32	SAP for Oily Rags
154	SAP 96	132	G- to J-31, -32	SAP for Absorbent Pads
155	SAP 97	132	G- to J-31, -32	SAP for 1,1,1,-Trichloroethane
156	SAP 98	132	G- to J-31, -32	SAP for Wood Rosin
157	SAP 99	132	G- to J-31, -32	SAP for Contaminated Rubber Hoses
158	SAP 100	132	G- to J-31, -32	SAP for Oily Absorbent Material (Safe Step)
159	SAP 101	132	G- to J-31, -32	SAP for Tungsten Rods

Table 1-1 (continued)
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
160	SAP 102	132	G- to J-31, -32	SAP for Tungsten Rods
161	SAP 103	132	G- to J-31, -32	SAP for Cobalt Rods
162	SAP 104	132	G- to J-31, -32	SAP for Monel Rods
163	SAP 105	132	G- to J-31, -32	SAP for Solvent Soaked Cement Rags
164	SAP 106	132	G- to J-31, -32	SAP for Soaked Oily Rags
165	SAP 107	132	G- to J-31, -32	SAP for Isopropyl Alcohol
166	SAP 108	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
167	SAP 109	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
168	SAP 111	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
169	SAP 112	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
170	SAP 113	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
171	SAP 114	202	D-31, D-32 E-31, E-32	SAP for Epoxy and Enamel Paint
172	SAP 133	210	E-26	SAP for Waste Paint (Solid), Building 210
173	SAP 146	356	D-24	SAP for Waste Gasoline and Diesel, Building 356
174	SAP 171	210	E-26	SAP for Chrome Stained Rags and Tape, Building 210
175	UST 1	128	C-28	Fuel Oil Tanks 128.1 and 128.2, and Pump Vault 128.3
176	UST 2	216	C-31	Paint Wash Tank 216.1
177	UST 3	129	D-31	Diesel Fuel Tanks 129.1 and 129.2
178	UST 4	202	D-31, E-31 D-32, E-32	Paint Wash Tanks 202.1, 202.2, and 202.3
179	UST 7	302	E-38	Diesel Fuel Tanks 302.1, 302.2, and 302.3
180	UST 10	207	F-30	Diesel Fuel Tank 207.1
181	UST 14	132	I-32	Oily Slop Tank 132.1
182	UST 19	301	P-37, P-38	Waste Sludge Tank 301.1
183	ADD 1	102	NAVSTA	Can Crushing Unit
184	ADD 2	132	J-32	Coolant Recovery Tanks, Building 132
185	ADD 3	50	D-16, D-17, D-18	Wood Block Floors, Building 50
186	ADD 4	109	H-28, I-28	Building 109
187	ADD 5	131	H-30, H-31	Process Tanks, Building 131
188	ADD 6	P-11	H-23	Floor Drain, Building P-11
189	ADD 7	A	J-23	Sump, Warehouse A
190	ADD 8	T 2	F-24	Storage Area, Temporary Building 2

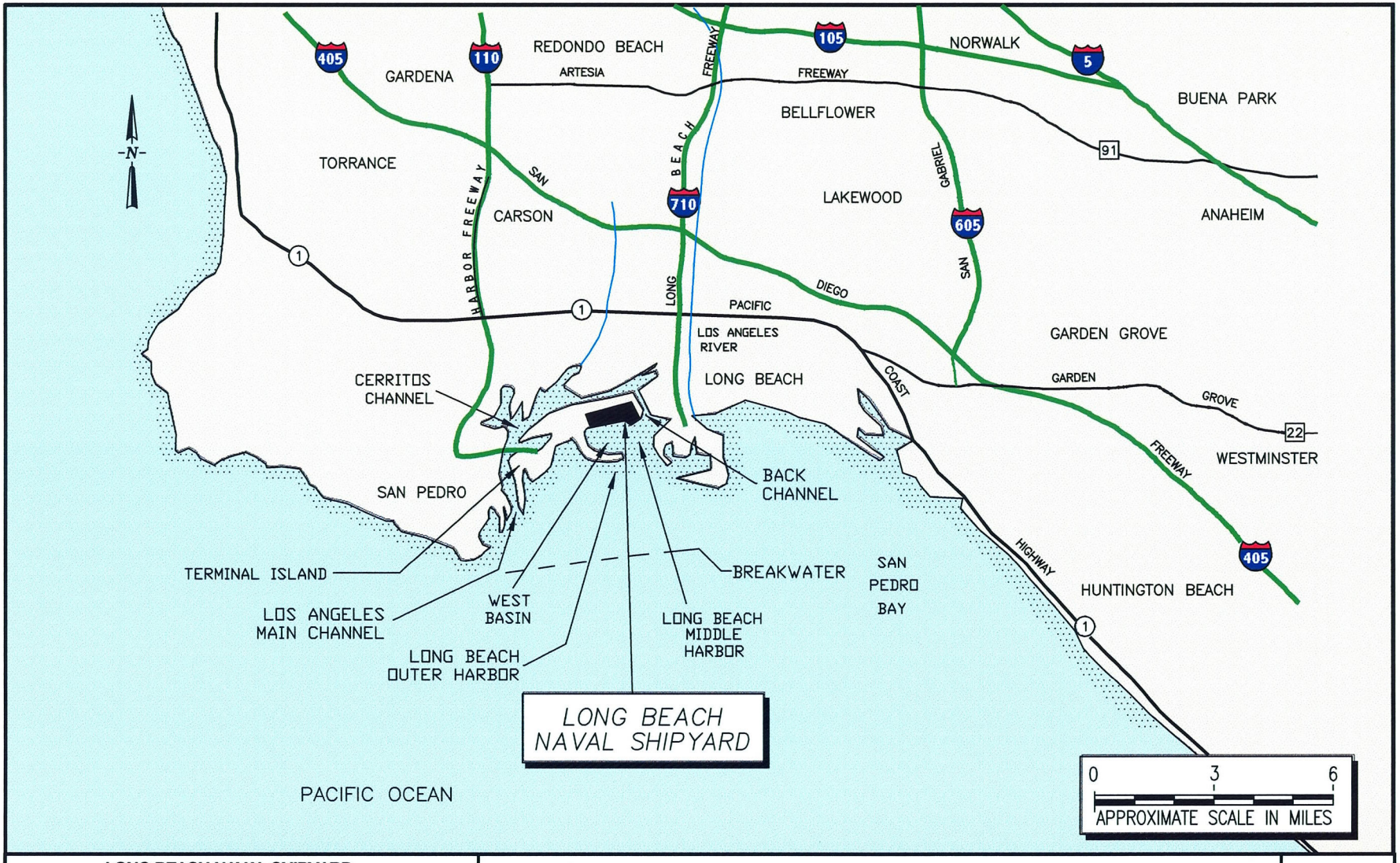
Table 1-1 (continued)
Group B Areas of Concern
Long Beach Naval Shipyard

No.	AOC No.	Bldg. No.	Grid No.[a]	Description
191	ADD 9	T 3	F-24	Storage Area, Temporary Building 3
192	ADD 10	173	F-32, F-33	Sandblast Hopper/Conveyor System
193	ADD 11	NA[b]	NA[b]	Mercury Manometers
194	ADD 12	197	F-42, G-42	Building 197 Mercury Gage Repair Area
195	ADD 13	104	J-26	Mercury-Sealed Motor Pump Stand Area, Building 104
196	ADD 14	150	F-35	Mercury-Sealed Motor Pump Stand Area, Building 150

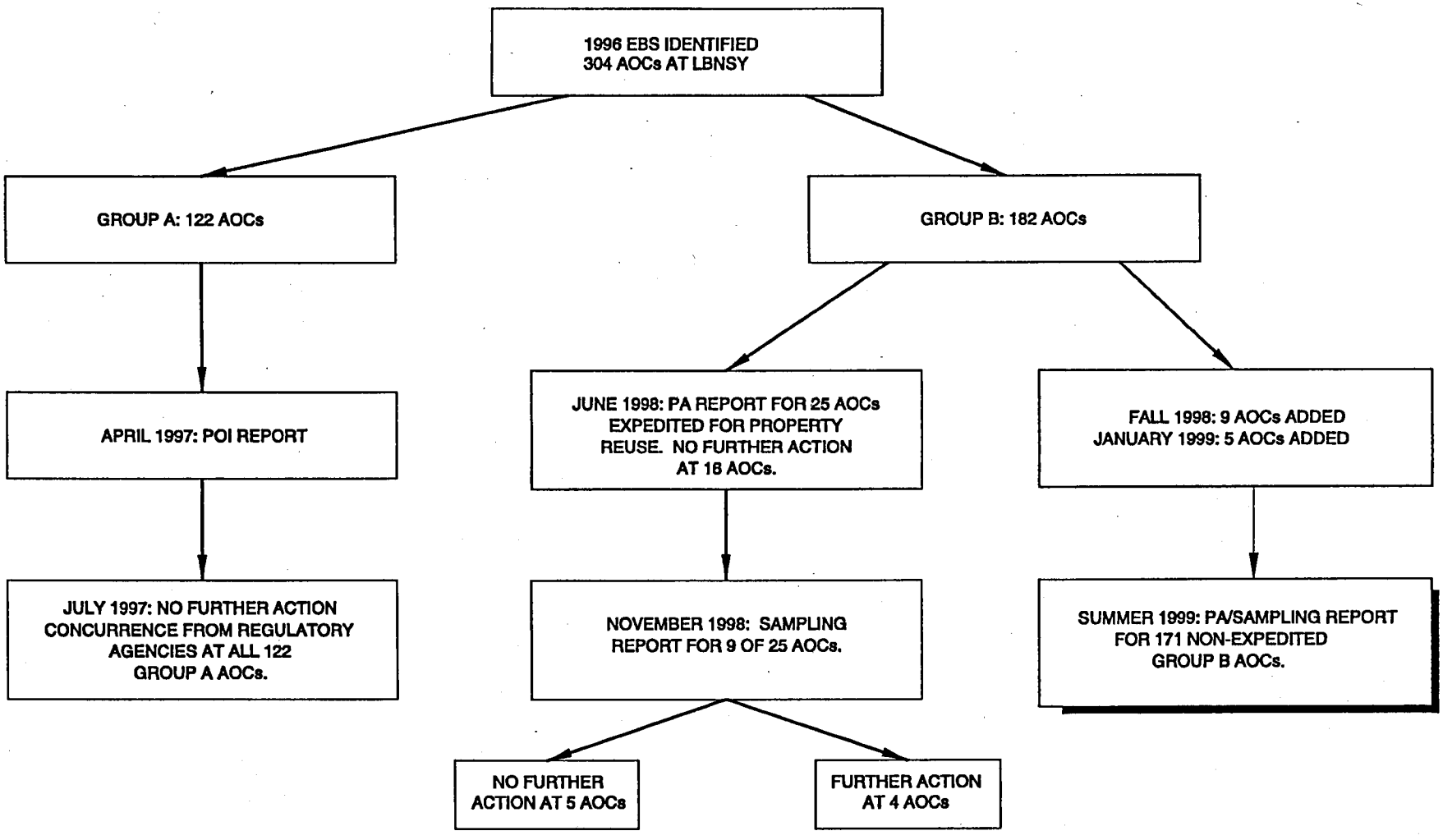
Notes:

(a) Figure 1-3 grid location number.
(b) At many locations throughout Long Beach Naval Shipyard.

ADD = Additional
AOC = Area of Concern
Bldg. = Building
BOWTS = Bilge Oily Wastewater Treatment System
HIST = Historical
HWF = Hazardous Waste Facility
IWS = Industrial Wastewater System
LIW = Liquid Industrial Waste
MISC = Miscellaneous
NA = Not Available
NAVSTA = Naval Station
No. = Number
PA = Preliminary Assessment
PCB = Polychlorinated Biphenyl
PT = Process Tank
SAP = Satellite Accumulation Point
SSS = Sanitary Sewer System
T = Temporary
UST = Underground Storage Tank



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		**FIGURE**
CDM Federal Programs Corporation *A Subsidiary Of Camp Dresser & McKee Inc.*	DATE: 7/99	**AREA LOCATION MAP**
	FN: 4.1-1a.DWG	**1-1**
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	



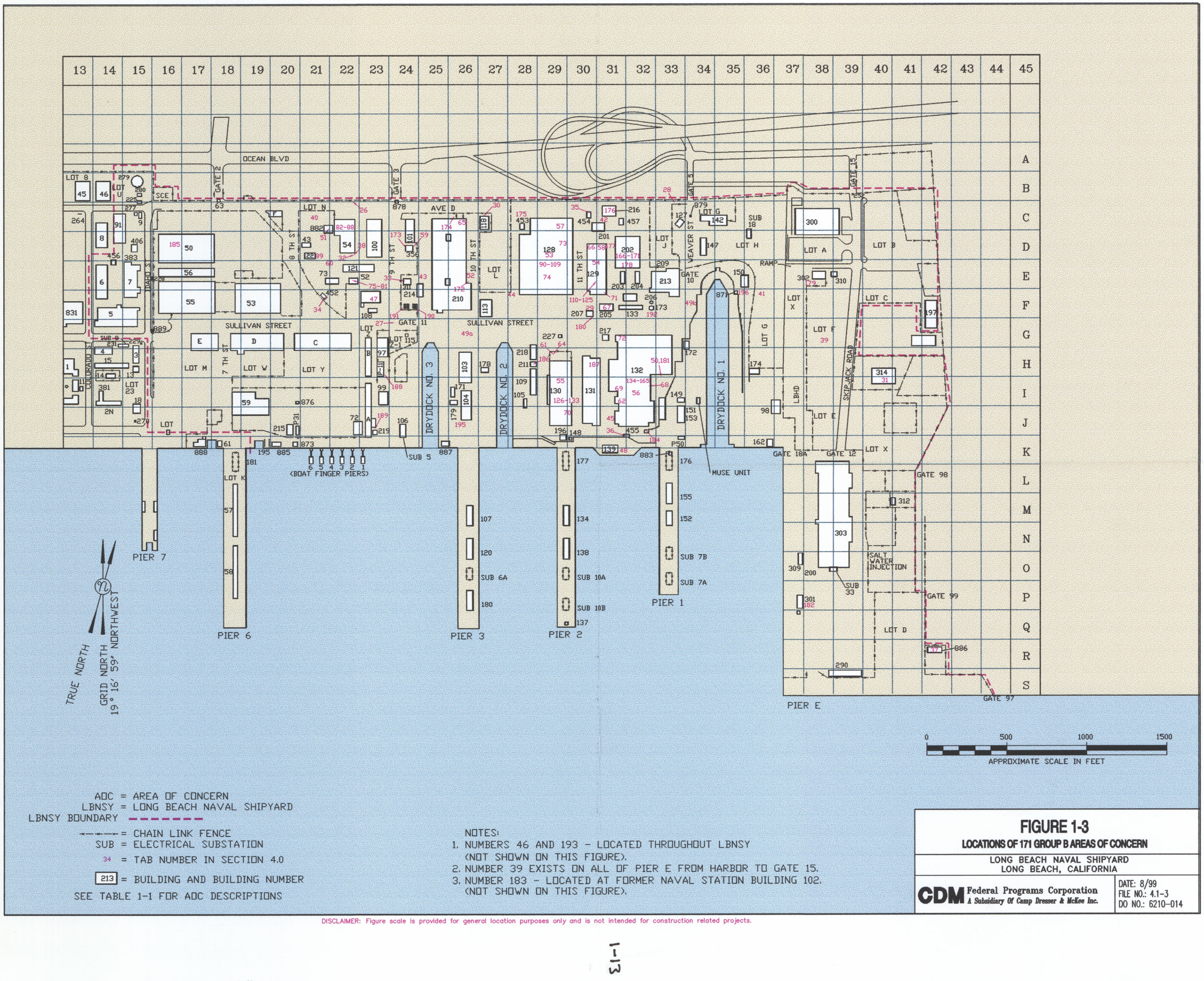
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.1-2
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

STAGES OF INVESTIGATION FOR AREAS OF CONCERN

FIGURE
1-2



AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
LBNSY BOUNDARY ---------
= CHAIN LINK FENCE
SUB = ELECTRICAL SUBSTATION
34 = TAB NUMBER IN SECTION 4.0
213 = BUILDING AND BUILDING NUMBER
SEE TABLE 1-1 FOR AOC DESCRIPTIONS

NOTES:
1. NUMBERS 46 AND 193 - LOCATED THROUGHOUT LBNSY (NOT SHOWN ON THIS FIGURE).
2. NUMBER 39 EXISTS ON ALL OF PIER E FROM HARBOR TO GATE 15.
3. NUMBER 183 - LOCATED AT FORMER NAVAL STATION BUILDING 102. (NOT SHOWN ON THIS FIGURE).

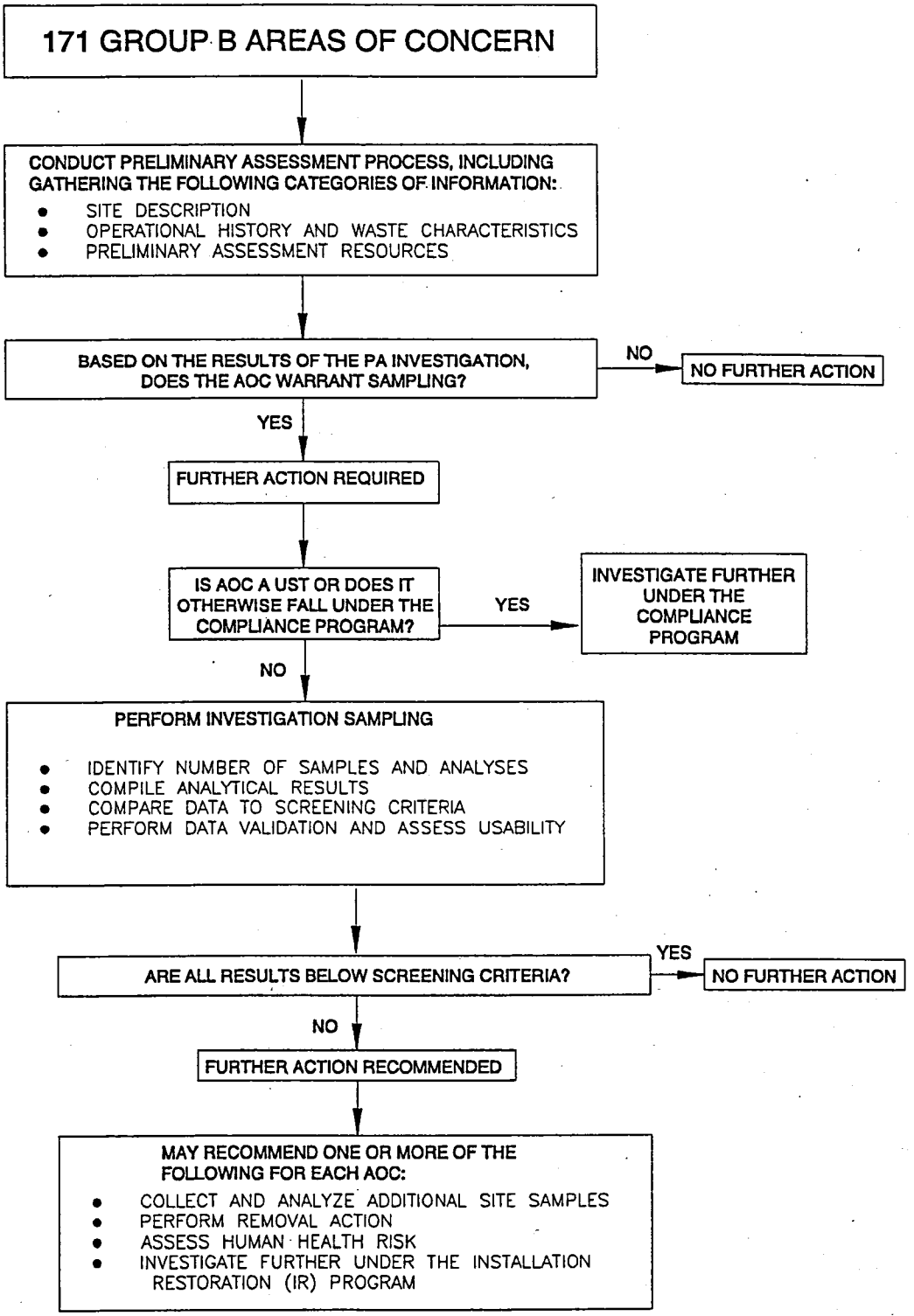
FIGURE 1-3
LOCATIONS OF 171 GROUP B AREAS OF CONCERN

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 8/99
FILE NO.: 4.1-3
DO NO.: 6210-014

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.1-4	DECISION FLOWCHART FOR GROUP B AOCs
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	1-4

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2.0 BACKGROUND

The following sections discuss the LBNSY site location, LBNSY history, general environmental setting, and potential contaminant pathways.

2.1 SITE LOCATION

LBNSY and the former Naval Station Long Beach (NAVSTA) together form LBNC. LBNSY is located in the southern section of the Los Angeles Basin, between Interstate Freeways 110 and 710, on Terminal Island in the City of Long Beach, Los Angeles County, California, as indicated on Figure 1-1.

LBNSY consists of approximately 353 acres, of which approximately 99 acres are submerged lands within Long Beach Harbor's West Basin. The remaining 254 acres lie on Terminal Island and contain approximately 134 buildings. Land use surrounding LBNSY is port-related, commercial, or industrial.

2.2 SITE HISTORY

From its inception in 1939, LBNSY's primary mission was the repair and overhaul of naval vessels. In 1940, the threat of war prompted Congress to authorize the Second Deficiency Bill, which approved funds for construction of the U.S. Naval Drydocks on a 45-acre site in San Pedro Bay, then known as Brighton Beach. During the early 1940s, the Navy constructed a seawall and filled the area between it and the former shoreline with dredged material; as a result, the entire LBNSY is constructed on man-made fill.

With the outbreak of World War II, activity at the U.S. Naval Drydocks accelerated in the early 1940s. By the mid-1940s, three drydocks (designated Drydocks 1, 2, and 3) had been constructed and were in use. In 1948, the base was officially renamed Long Beach Naval Shipyard. LBNSY further expanded in the early 1950s with the outbreak of the Korean War (LBNSY-ED 1996a). With the addition of Pier Echo in 1963, LBNSY reached its current size of 353 acres, including submerged lands.

LBNSY maintained a wide array of resources to enable continued fleet service throughout the 1970s and 1980s. Support facilities included machine shops, an optical shop, blacksmith's shop, paint shop, sheet metal shop, steel shop, electrical shop, pipe and copper shop, rigging shop, and woodworking shop. LBNSY's three drydocks supported hull structural repair and painting, propeller and shafting maintenance, and installation and repair of hull protection systems.

LBNSY was closed in accordance with the Base Closure and Realignment Act of 1990, Fourth Round. Mission cessation occurred on 19 July 1996, while operational closure occurred on

30 September 1997. In August 1998, the Navy and POLB entered into a lease in furtherance of conveyance (LIFOC) under which the POLB has taken control of NAVSTA and LBNSY until final disposal of property can occur (SWDIV 1999).

2.3 ENVIRONMENTAL SETTING

The following sections summarize the climate, topography, surface hydrology, hydrogeology, cultural resources, and ecology of the LBNSY area.

2.3.1 Climate

The local climate is semi-arid, characterized by mild winters and warm summers (BNI 1997a). Mean monthly temperatures, based on a thirty-year record, range from a low of 55° Fahrenheit (F) in January to a high of 74 °F in August (Western Region Climate Center 1997). Most precipitation typically occurs from November through March. The mean annual precipitation based on the thirty-year period of record is 11.8 inches. Relative humidity ranges from 50 to 80 percent annually. Prevailing on-shore winds predominantly from the west-northwest are characterized by mean wind speeds ranging from 5.1 to 7.4 miles per hour (mph). In the late fall and early winter months, high-speed, gusty, off-shore, northeasterly ("Santa Ana") winds originating in Southern California deserts occasionally occur.

2.3.2 Topography

The land surface beneath LBNSY is relatively flat, with a total relief of less than 35 feet. Ground surface elevations generally range from less than 15 feet below the local mean lower low water (MLLW) datum in the area immediately northeast of LBNSY Drydock 1 to greater than 20 feet above MLLW near the south end of Pier T (BNI 1997a). The lowest topographic area is located northeast of LBNSY Drydock 1.

2.3.3 Surface Hydrology

As indicated on Figure 1-1, Terminal Island is surrounded by the following marine harbors: the West Basin of the Long Beach Middle Harbor; Long Beach Outer Harbor (San Pedro Bay); the Cerritos Channel to the northwest; and the Back Channel to the east. The West Basin borders LBNSY to the south and is located within the LBNC boundary.

Surface water flows toward topographically low areas, where it is collected by the LBNSY storm drain system and subsequently discharged to the West Basin in accordance with facility discharge permits that were in effect when the base was active.

2.3.4 Hydrogeology

LBNSY is located in the southern portion of the West Coast Basin, a physiographic feature that extends from the Palos Verdes Peninsula southwest to the Newport-Inglewood Hills. Within the basin, three Quaternary-age unconsolidated sedimentary units constitute the uppermost 500 to 700 feet of geologic deposits, and include, in ascending order, the Pleistocene-age San Pedro formation, the Pleistocene-age Lakewood formation, and Recent-age deposits. These uppermost units are underlain by approximately 13,500 feet of older marine and continental sedimentary deposits, which are, in turn, underlain by older metamorphic basement rock. LBNSY is underlain by upper Recent-age deposits and man-made fill deposits, which extend down 20 to 30 feet below ground surface (bgs) locally (BNI 1999). The upper Recent-age deposits and fill materials generally consist of fine-grained sands, silts, silty clays, and clayey silts. Dispersed shell fragments are common in the sand and silt deposits.

Generally, up to four recognized aquifers may occur in the uppermost sedimentary formations of the southern portion of the West Coast Basin (BNI 1997a). Where present, these aquifers primarily consist of continuous intervals of porous and permeable unconsolidated sands. They include, in ascending order: the Silverado and Lynnwood (commonly termed "400-Foot-Sand") aquifers in the San Pedro formation, the Gage aquifer (commonly termed "200-Foot-Sand") in the Lakewood formation, and the Gaspur aquifer in lower Recent-age deposits. In general, a fine-grained unit (silt and clay) occurs between each aquifer and acts as a semi-confining layer. Although these four aquifers are important water-producing zones in other areas of the West Coast Basin region, seawater intrusion in the coastal area has significantly restricted the usefulness of the aquifers as water resources. Groundwater beneath the LBNSY has been impacted by saline intrusion and is considered nonpotable (BNI 1997a). The Navy has proposed and the RWQCB has agreed, that because the groundwater at the Long Beach Naval Complex meets one of the exceptions in State of California Water Resources Control Board Resolution 88-63, it is not potentially suitable as a source of drinking water and it is unnecessary to remediate the groundwater to protect the beneficial use of municipal or domestic supply. Therefore the RWQCB has determined that the California Ocean Plan is the more appropriate groundwater screening criteria for this site.

Unconfined groundwater (water table conditions) is encountered beneath LBNSY in the uppermost Recent-age deposits and man-made fill material (BNI 1997a). This shallow saturated zone is not associated with the deeper Gaspur aquifer, consisting of lower Recent-age deposits. The static water table beneath LBNSY has been observed to range between depths of approximately 8 to 13 feet bgs (BNI 1999). Water table levels may be influenced locally by tidal fluctuations in the West Basin (BNI 1997a). The horizontal groundwater flow direction in the unconfined surficial aquifer (uppermost Recent-age deposits and man-made fill material) in the LBNSY area is generally toward the north to northeast (BNI 1997a and 1999), although local variations may occur. The regional hydraulic gradient ranges from 0.0002 to 0.006 foot/foot; however, local variations occur, commonly due to nearby dewatering systems (BNI 1997a).

2.3.5 Cultural Resources

The BRAC Cleanup Plan (BCP) (SWDIV 1998) reported no significant cultural resources or structures within LBNSY. Although 47 potential architectural resources have been identified, none qualifies for listing on the National Register of Historic Places (SWDIV 1998).

2.3.6 Ecology

Through 1998, LBNSY was highly developed, with most of the surface area covered by structures, asphalt, and concrete. Unpaved areas were landscaped with ornamental lawns, shrubs, and trees. There were no natural (native) plant communities or wetlands within LBNSY (SWDIV 1998). Redevelopment by POLB may alter site conditions in 1999 and beyond.

No natural terrestrial wildlife habitats were present at the facility. Terrestrial wildlife was limited to typical urban species (e.g., rodents and birds) and various coastal waterfowl. The most abundant terrestrial birds were typical urban species, including rock dove, mourning dove, American crow, European starling, and house sparrow (SWDIV 1998). The most abundant coastal waterfowl included the Heermann's gull, California brown pelican, western gull, surf scoter, ring-billed gull, black-bellied plover, and western grebe (SWDIV 1998).

The West Basin contains various marine fish and mammal species. Common species of fish include northern anchovy, Pacific sardine, jacksmelt, white croaker, and queenfish (SWDIV 1998). Various marine mammals have been sighted in area harbors. These include the California sea lion, harbor seal, common dolphin, Pacific white-sided dolphin and gray whale (SWDIV 1998). All marine mammals are protected under the Marine Mammal Protection Act of 1972.

Threatened and Endangered Species. The only endangered species observed at LBNC (typically in the West Basin area) has been the California brown pelican (SWDIV 1998). Approximately 0.5 mile west of the NAVSTA Mole area, a California least tern nesting colony was located (SWDIV 1998). The West Basin is considered a minor foraging area for these birds. The California least tern is classified as a Federal and State endangered species.

2.4 ASSESSMENT OF POTENTIAL CONTAMINANT PATHWAYS

Assessment of contaminant pathways is an important means of evaluating a potentially contaminated site (U.S. EPA 1991). The exposure pathway evaluation considers the migration of contaminants through various media (e.g., soil, groundwater, surface water, and air) and the potential for subsequent exposure and impact on associated human and ecological receptors.

Very few people (i.e., potential receptors) are currently working at LBNSY; however, as reuse proceeds, construction activities will increase the number of workers on-site, and potential

exposures may increase accordingly. The area surrounding LBNC is industrial, containing many port-related activities. There are approximately 163,000 residents within a four-mile radius of LBNSY (Cahill 1998), of which approximately 30,000 are within two to three miles of LBNSY. There are no residential areas within approximately 1.5 miles of LBNSY.

The following sections present a brief evaluation of the migration and exposure potential for contaminants in soil, groundwater, surface water, air, and on building floor surfaces.

Figures 2-1 and 2-2 indicate a site conceptual model that summarizes potentially complete exposure pathways under current and future scenarios, respectively. Current and future scenarios (assuming site reuse occurs) are addressed separately for each pathway.

2.4.1 Soil Pathway

The soil pathway is considered to be a direct contact pathway. The soil pathway evaluates direct exposure by humans to soil through dermal contact or incidental ingestion. Incidental ingestion of soil may occur through hand-to-mouth behavior following direct contact with soil. At present, incidental ingestion of soil or dermal contact with soil is considered to be an incomplete or minor exposure pathway (SWDIV 1998).

Current AOC conditions preclude soil exposure as a pathway of concern at 167 of the 171 AOCs addressed in this report, because the AOCs are covered by asphalt or concrete, inaccessible to the public, and accessed infrequently by workers. Soil is uncovered in limited areas at three AOC and sediment is uncovered at three AOCs (see Table 2-1), so direct contact with site workers is possible. Thus, surface soil sampling was performed at three AOCs and sediment sampling was performed at three AOCs.

Future land use will likely include nonmilitary commercial and industrial port-related uses. Residential use is not anticipated. The highest potential for future impacts from soil would be to workers exposed to soil during excavation (SWDIV 1998). Exposure could occur from direct contact with soil that is excavated when foundations for new buildings are constructed, or exposure could occur from inhalation of soil particulates during excavation activities. Because future soil contact is considered possible, subsurface soil sampling was proposed at those AOCs identified in Table 2-1 and detailed in the Work Plan and Addendum Number 2 (CDM Federal 1998a and 1999).

2.4.2 Groundwater Pathway

The groundwater pathway is considered to be a direct contact pathway. The groundwater pathway evaluates direct exposure to groundwater or ingestion of groundwater through drinking water wells.
Currently, no direct contact pathway to groundwater is present at the 171 AOCs, because groundwater occurs at depths between 2 and 30 feet bgs (depending on the ground surface

elevation), the AOCs are paved with asphalt or concrete, and no drinking water wells exist onsite or within 3 miles.

If contaminants were released to soil, the potential exists for contaminant migration down to shallow groundwater. Contaminants in groundwater could then potentially reach the West Basin and pose a threat to aquatic life, as discussed in Section 2.4.3.

The risk to human health posed by the groundwater pathway through drinking water wells in the vicinity of LBNC appears to be insignificant, because the Navy has proposed and the RWQCB has agreed, that because the groundwater at the Long Beach Naval Complex meets one of the exceptions in State of California Water Resources Control Board Resolution 88-63, it is not potentially suitable as a source of drinking water and it is unnecessary to remediate the groundwater to protect the beneficial use of municipal or domestic supply. No water supply wells screened in deeper aquifers are located within approximately three miles of LBNC. Two municipal water supply wells and at least seven industrial water supply wells are located between approximately 3 and 4 miles north of LBNSY. All of the wells are screened in the Silverado aquifer at depths of over several hundred feet bgs. LBNC receives its water supply from the City of Long Beach.

Because future construction scenarios could expose workers to potential contaminants occurring in shallow groundwater, groundwater sampling was proposed at those AOCs where adverse impacts were deemed possible, as identified in Table 2-1 and in the Work Plan and Addendum Number 2 (CDM Federal 1998a and 1999).

2.4.3 Surface Water Pathway

The surface water pathway is considered to be a direct contact pathway. The surface water pathway evaluates direct exposure to bodies of surface water through dermal contact or incidental ingestion. The current and future scenarios for the surface water pathway are not expected to vary significantly.

No surface water bodies are located within the boundaries of LBNC, except for the West Basin. Surface water runoff at LBNSY is collected by storm drains and discharged to the West Basin. Similar to the groundwater pathway, contaminants in surface water drainage that reach the harbor could potentially pose a direct threat to aquatic life. Commercial and sport fishing for various types of fish occurs throughout the coastal area within 15 miles of LBNSY, according to the U.S. Fish and Wildlife Service (FWS) (personal communication [pers. comm.] FWS 1998). The harbor is not used for commercial fishing, and recreational fishing in the West Basin is not allowed. Potential impacts on ecological receptors is currently being addressed under the IR Program.

The direct pathway for human receptors is considered incomplete or minimal (SWDIV 1998) for two reasons. First, significant dilution of any groundwater contamination that might reach

the harbor would be likely upon mixing with harbor seawater. Second, there are no surface water intakes for drinking water and the harbor is not used for recreational swimming.

2.4.4 Air Pathway

The air pathway is considered to be a direct contact pathway. The air pathway provides a means for potential contaminants to volatilize to the atmosphere or airborne particulates to be transported. Human exposure may occur through inhalation of dust or vapor emissions.

Currently, the land surrounding LBNC is used for industrial and commercial port-related purposes. All AOCs are located in access-limited areas that are fenced and locked. Entrance to LBNSY is currently limited to authorized personnel through use of guards stationed at the main gate. No residential populations exist in the immediate vicinity of LBNSY.

The current air exposure pathway to residents is considered minimal because hazardous materials are no longer used, hazardous waste is no longer generated, and the AOCs are paved, inaccessible to the public, and in a nonresidential area (SWDIV 1998). In addition, the contaminants of concern at many sites (e.g., waste oil) are not likely to volatilize. Wind erosion of contaminated soil is unlikely because most of LBNSY is paved.

In the future, LBNSY property will likely remain industrial and paved. However, if subsurface contamination is disturbed by excavation, the air exposure pathway could be potentially complete. No air sampling was performed for the AOC investigation because future construction activities could not be simulated.

2.4.5 Building Floors Pathway

The building floors pathway is considered to be a potentially complete direct exposure pathway at LBNSY AOCs. Building floors may include any building surface or material (e.g., standing liquid) where direct dermal contact with contamination could occur. Because current and future construction scenarios could expose workers to potential contaminants occurring on facility surfaces, medium or surface wipe sampling was conducted at nine AOCs where adverse impacts were deemed possible (Table 2-1). Sampled surfaces included wood blocks floors (four AOCs), pavement or floors containing spilled or leaked machinery or PCB oils (four AOCs), and standing waste liquid or sludge in sumps or drains (four AOCs). (One AOC had all three types and one had two types.)

2.4.6 Summary of Pathways and Environmental Hazards

Current exposure pathways for twelve AOCs are potentially complete as identified in Table 2-1. The current exposure pathways for 159 of the 171 AOCs addressed in this report are considered incomplete (i.e., no risk exists for exposure of receptors to contamination).

Future exposure pathways (e.g., those resulting from construction activities) are considered potentially complete at the remaining 159 AOCs. Potentially complete exposure pathways are those capable of transferring contamination from media (e.g. soil or groundwater) to receptors (e.g., site workers). Based on the PA findings presented in Sections 4.26 to 4.196, sampling was performed at 35 AOCs where contaminants were considered to have potentially been released to soil, groundwater, sediment, and/or building floor surfaces.

Figures 2-1 and 2-2 are site conceptual models under the current scenario and the future scenario, respectively.

Table 2-1
Potentially Complete Exposure Pathways

AOC No.	Description	Soil or Sediment	Ground-water	Surface Water	Air	Building Floor Surfaces[d]
MISC 1	Wood Block Floors	No	No	No	No	Yes
(Building 128)	Surface Soil Beneath Cooling Platform	Yes	No	No	[b]	No
	Liquid in Sump	No	No	No	[a]	Yes
	Machinery Oil Leak	No	No	No	No	Yes
MISC 2 (Building 129)	Wood Block Floors	No	No	No	No	Yes
MISC 4	Wood Block Floors	No	No	No	No	Yes
(Building 132)	Liquid in Floor Socket	No	No	No	[a]	Yes
MISC 5	Dirt Floor	Yes	No	No	[b]	No
PCB 16	Equipment: PCB oil	No	No	No	No	Yes
PCB 17	Equipment Sumps: PCB oil	No	No	No	No	Yes
PCB 20	Equipment	No	No	No	No	Yes
PT 1	Plating Shop	[c]	[c]	No	[b]	No
	Liquid in Sump	No	No	No	[a]	Yes
PT 10	Dirt Floor	Yes	No	No	[b]	No
UST 4	Paint Wash Tanks, Sandblasting Area	[c]	[c]	No	[b]	No
	Storm Drain Catch Basin Sediment	Yes	No	No	[a]	No
ADD 3 (Building 50)	Wood Block Floors	No	No	No	No	Yes
ADD 6	Sludge and Liquid in Floor Drain	No	[c]	No	No	Yes
ADD 13	Sediment	Yes	No	No	No	No
ADD 14	Sediment	Yes	No	No	No	No
All Other 157 Group B AOCs Addressed in this Report		**Yes[c]**	**Yes[c]**	**No**	[b]	**No**

Notes:

Sampling was recommended at an AOC only if exposure pathways were potentially complete and if Section 4 identified potential releases.

(a) If volatile organic compounds still exist in liquid.
(b) Potentially complete only under future construction scenarios. Air cannot be sampled at this time because soil has not been disturbed.
(c) Potentially complete only under future construction scenarios.
(d) Wood block floors, PCB liquid leaks on floors, or remaining liquids or sludge in sumps or drains.

ADD = Additional Area of Concern
AOC = Area of Concern
MISC = Miscellaneous
No. = Number
PCB = Polychlorinated Biphenyl
PT = Process Tank

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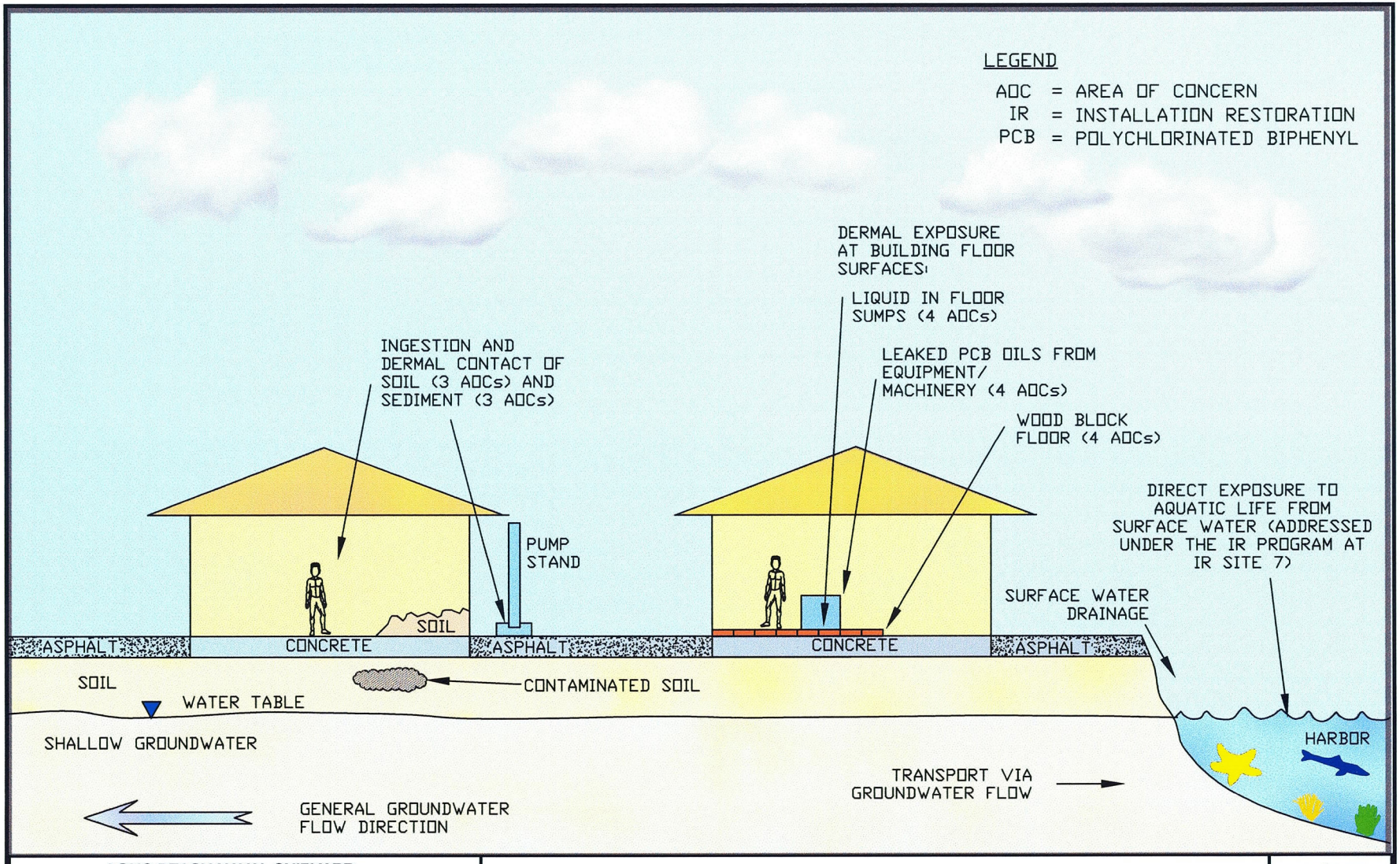
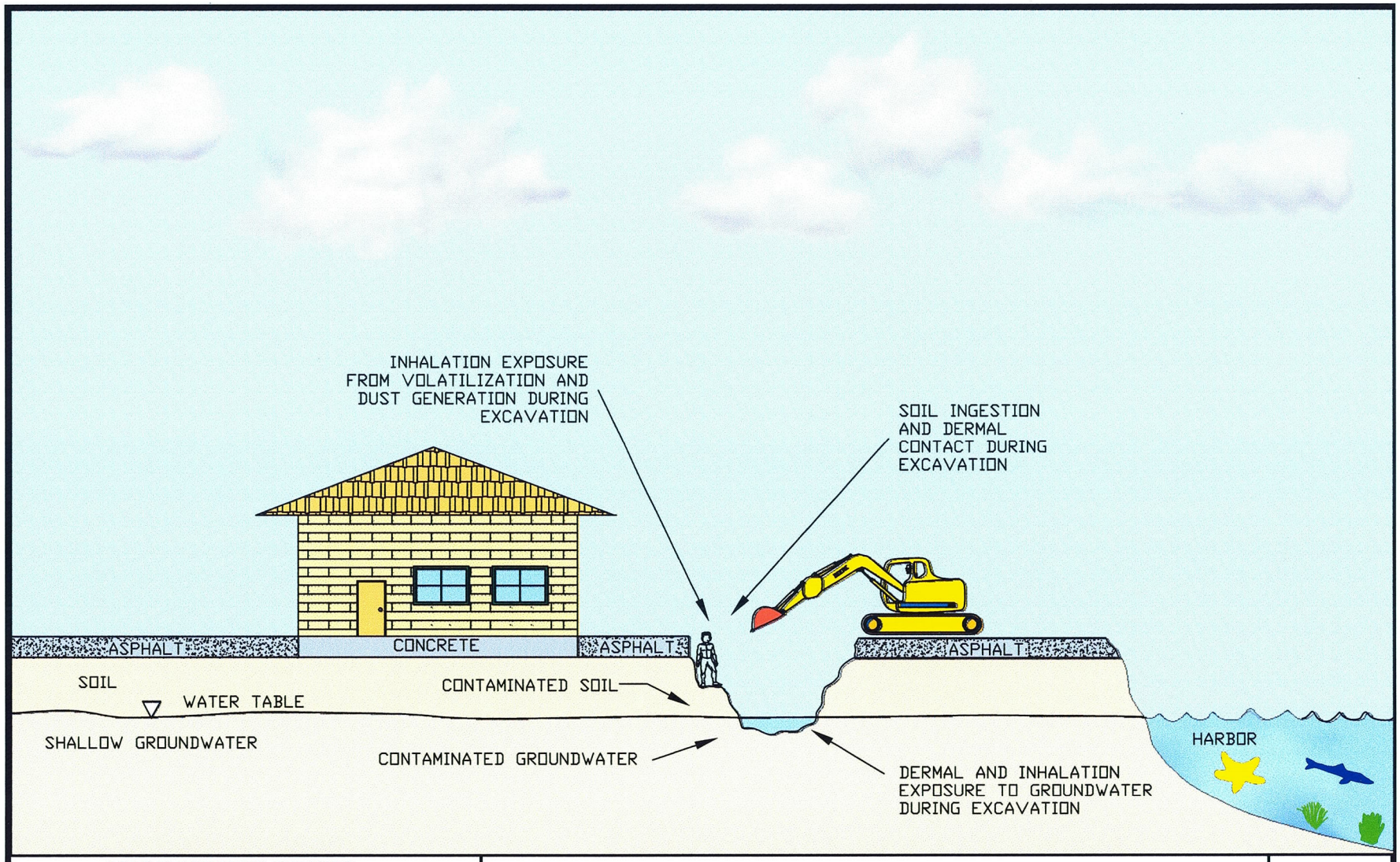


LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SITE CONCEPTUAL MODEL - CURRENT SCENARIO LONG BEACH NAVAL SHIPYARD GROUP B AREAS OF CONCERN	FIGURE 2-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.2-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SITE CONCEPTUAL MODEL - FUTURE SCENARIO LONG BEACH NAVAL SHIPYARD GROUP B AREAS OF CONCERN	FIGURE 2-2
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.2-2 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

3.0 INVESTIGATIONAL METHODOLOGIES

This section presents the PA and sampling investigation methodologies implemented under the AOCs Investigation project, including site reconnaissance, records search, field investigation, laboratory analysis, quality assurance, background metals assessment, screening criteria selection procedures, and data management,. Methodologies were conducted in accordance with the Work Plan (CDM Federal 1998a) and Work Plan Addendum Number 2 (CDM Federal 1999).

3.1 SITE RECONNAISSANCE

An initial site reconnaissance of the AOCs was conducted in January and March 1998. Follow-up site reconnaissances were made at selected AOCs at various later dates in 1998. During each site reconnaissance, observations were made regarding any visual evidence of past hazardous substance use, storage, or disposal. Physical features, such as tank locations and paved areas, were noted. Associated potential sources of releases were identified, in addition to areas of stained pavement, stained soil, or stressed vegetation. Each AOC was photographed. (Photographs are presented in Section 4.0.)

3.2 RECORDS SEARCH

Following the site reconnaissance, a records search was conducted for each AOC. The records search included document review, historical aerial photograph and map review, and personnel interviews, as summarized in the following sections.

3.2.1 Document Review

Reviewed documents included all available, relevant documents archived at LBNSY and relevant historical documents obtained from SWDIV. These included industrial waste reports, subsurface contamination investigations, hazardous materials storage location documents, spill reports (Appendix B), inspection reports, compliance records, the EBS (LBNSY-ED 1996a), the BCP (SWDIV 1998), and many other documents listed in Section 6.0. Most AOC-related documents available for review were post-1990 materials; because of the scarcity of pre-1990 information, there is some uncertainty concerning AOC site histories, chemical storage and use, disposal methods, and spills.

3.2.2 Historical Aerial Photographs and Maps Review

Aerial photographs from the 1940s through the 1990s, as well as historical Navy Public Works Department (PW) and other planning or as-built maps, were reviewed to provide a historical perspective on land use. Many of the AOCs were former SAPs that stored wastes in quantities no greater than one 55-gallon drum in size, process tanks inside of buildings, or USTs. These could not be identified on early aerial photographs because they were too small to be

discernible at the scale of the aerial photographs, covered by a roof, or underground. Copies of several basewide historical aerial photographs are compiled in Appendix D; basewide historical maps are presented in Appendix E. Information obtained from historical photographs and maps applicable to each AOC is compiled in Section 4.0.

3.2.3 Personnel Interviews

Interviews with former LBNSY personnel were conducted to obtain information on historical and current conditions at each of the AOCs. Information concerning past waste handling, storage, and disposal practices at LBNSY obtained during personnel interviews is presented in Section 4.0. Personnel who were interviewed are listed in Section 6.0, References.

3.3 FIELD INVESTIGATION

This section describes the methodologies used during the field investigation. The field methods used during this PA were selected to provide a screening-level assessment of the presence or absence of AOC-related contamination in surface and subsurface soils, sediments, groundwater, and selected building floor surfaces. Field investigation methodologies include the following: selection of sampling locations; subsurface utility detection; concrete coring; soil sampling; lithologic logging; depth-discrete groundwater sampling; waste liquid sampling; wood block sampling; PCB wipe sampling; sample labeling, handling, and management; decontamination; IDW management; and land surveying.

Three AOCs were investigated for the Port of Long Beach by URS Greiner Woodward Clyde in January 1999 because these sites were expedited for reuse. Appendix P contains the report prepared for these three AOCs. The AOCs were for the Wood Block Floors at Building 50 (AOC Additional [ADD] 3, Section 4.185), the Floor Drain at Building P-11 (AOC Add 6, Section 4.188), and the Sump at Warehouse A (AOC ADD 7, Section 4.189).

3.3.1 Sampling Locations

Sampling locations were selected to target worst-case areas based on visual observations and source locations. Staining and/or areas where wastes had been used or stored indicated worst-case locations for soil samples. At AOCs where the potential contaminant source was at the ground surface, soil samples were typically collected 1 foot bgs. At AOCs containing USTs, soil samples were collected 2 or 3 feet below the bottom of the UST. Groundwater samples were typically collected adjacent to, or immediately downgradient from, a potentially impacted area. Wood block samples were collected from stained areas and wipe samples were collected near sources of potential contamination.

3.3.2 Subsurface Utility Detection

Proposed sampling locations at each AOC were surveyed for underground utilities and obstructions prior to performing intrusive sampling. Spectrum Environmental Services, Inc.(ESI) Urban Geophysics of San Fernando, California performed the underground utility survey from 27 through 29 May 1998, from 17 through 19 February 1999, and on 4 March 1999. The following pieces of equipment were used: a passive induction detector, an electromagnetic (EM) induction detector, radio detection equipment, and ground penetrating radar (GPR). A photograph taken during utility detection surveying is shown in Figure 3-1. Historical utility plans by the Navy were also reviewed. In addition, CDM Federal contacted Underground Services Alert (USA), who contacted utility companies who might have utility lines in the area; however, no utility companies identified subsurface lines that might be impacted by investigation activities.

3.3.3 Concrete Coring

Concrete Coring Company of Paramount, California was the concrete coring subcontractor who provided access for subsurface sampling on 3 June 1998, 26 August 1998, 24 February 1999, and 4 March 1999. The subcontractors cored through concrete in Buildings 52, 54, 128, 129, 130, 131, 132, 202, 205, and 210. Cored holes were later plugged with the intact concrete core and new concrete grout.

3.3.4 Soil Sampling

Soil sampling included the collection of surface soil and subsurface soil samples. Because all but three AOCs were completely covered by asphalt or concrete, most soil samples were collected from subsurface depths between 1 and 13 feet bgs.

3.3.4.1 Surface Soil/Sediment

Surface soil samples were collected at three AOCs (AOCs Miscellaneous [MISC] 1, MISC 5, and process tank [PT] 10), all at or near the dirt floor heat treatment area in Building 128) by scooping soil directly into precleaned 8-ounce glass jars provided by the laboratory. The jars were then capped with a Teflon™-lined lid and sealed.

Sediment samples were collected at three AOCs (AOCs UST 4, ADD 13, and ADD 14). Sediment samples were collected the same way as surface soil samples.

3.3.4.2 Subsurface Soil

Soil samples were collected using the Strataprobe™, a direct push technology (DPT) system operated by Transglobal Environmental Geochemistry (TEG) of Solana Beach, California. A photograph of the Strataprobe™ DPT system is shown in Figure 3-2.

A 1.0-inch-outer-diameter (OD), stainless steel leader rod with a stainless steel point was used to break through asphalt pavement at each AOC sampling location that was not covered with concrete. The leader rod was removed and replaced with a 1.0-inch-OD, 24-inch-long, piston, split-core sampler containing four 1.0-inch-diameter, 6.0-inch-long, stainless steel sample sleeves. The sampler was advanced with 1.0-inch-OD, 4.0-foot-long steel push rods to the top of the desired sample interval. A center rod was then lowered to unscrew the retractable tip of the sampler piston and raise it, thus making the sampler hollow-tipped. The soil sampler was then driven another 1.5 to 2 feet to collect a soil sample, then removed. The soil sample was labeled with the depth of the top of the sampler.

Upon retrieval of sample sleeves from the sampler, the exposed soil at the end of the sleeves was monitored with an organic vapor meter (OVM). The OVM used was a Thermo Environmental Instrument Inc. model 580B with a 10.6-electron-volt (EV) lamp. One or two of the bottom sleeves were kept as samples, depending on the volume of sample needed to perform laboratory analysis. Both ends of the sample sleeves were then immediately capped with Teflon™ squares and plastic end caps. The extra soil was placed in a labeled, self-sealing plastic bag for temporary storage as IDW and lithologic logging.

Boreholes used for soil sampling were also advanced to groundwater to collect groundwater samples as described in Section 3.3.6. Boreholes advanced by the Strataprobe™ for sample collection purposes were abandoned immediately following sampling by pouring dry bentonite granules to fill the borehole to within approximately 2 inches of the top of the asphalt or concrete pavement. The bentonite was then hydrated with clean water. An asphalt patch was then used to repair the pavement.

3.3.5 Lithologic Logging

Lithologic descriptions for soils collected during DPT soil sampling were recorded in the field logbook. Soils were logged in accordance with the Unified Soil Classification System (USCS). Lithologic logs are presented in Appendix G.

3.3.6 Depth-Discrete Groundwater Sampling

Depth-discrete groundwater samples were collected by TEG using a Strataprobe™ DPT system. A 1.0-inch steel leader rod containing a stainless steel, 1-inch-OD, slotted well screen was placed in the existing soil sample boring and pushed 2 to 3 feet below the depth at which groundwater was first encountered. A water level measurement was then obtained using a Solinst™ water level meter and was recorded to the nearest 0.1 foot. The exterior sleeve of the sampler was retracted, exposing the well screen.

Depth-discrete groundwater samples for VOCs were collected from the sampler using a 0.5-inch-OD, stainless steel bailer (Figure 3-3). The bailed sample was poured into 40-milliliter (ml) glass vials. New silicon tubing was then lowered into the sampler well screen, and the

sample volume required to perform analyses other than VOCs was collected using a peristaltic pump (Figure 3-3). A high capacity, in-line, Gelman Sciences model 0.45-micron filter was attached by silicon tubing extending down the direct-push boring to a Geopump™ single-head peristaltic pump, to filter the portion of the sample volume designated for analysis of dissolved metals. All borings were subsequently plugged as noted for soil borings in Section 3.3.4.

3.3.7 Waste Liquid Sampling

Waste liquid samples were collected from sumps at two AOCs (AOCs MISC 1 and PT 1) and from a small floor socket at a third AOC (AOC MISC 4). Teflon™ tubing was lowered into the sumps, and a peristaltic pump was used to extract the liquid. For filtered samples for metals analysis, a 0.45-micron filter was attached to the end of the tubing before pumping.

3.3.8 PCB Wipe Sampling

An 8.5-inch by 11-inch piece of card stock paper with a 10-centimeter (cm) by 10-cm square cut out of the center was placed over the desired sampling location. Using new nitrile gloves, the hexane-soaked cloth wipe was removed from the sample container. The wipe was held flat and wiped several times on the ground surface over the 10-cm by 10-cm area. The wipe was then immediately placed back into the sample container and the container was sealed with a Teflon™-lined lid. Figure 3-4 shows a photograph of the PCB wipe sampling technique.

3.3.9 Wood Block Sampling

At wood block sample locations, two to three wood blocks were pulled from the floor using a crowbar. A hand-held drill with 0.5-inch steel drill bit that had been decontaminated as described in Section 3.3.11 was used to drill through the blocks to obtain wood shavings. Shavings were then placed into sample jars. For each sample, a new decontaminated drill bit was used. The wood blocks (with several holes drilled through) were later returned to the flooring where they were obtained. Figure 3-5 shows a photograph of the wood block sampling technique.

3.3.10 Sample Labeling, Handling, and Management

All samples were handled and managed as described in the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) (CDM Federal 1998a). Sample identification (ID) numbers include the year the sample was collected and the site abbreviation "SY" for Shipyard (i.e., "98SY" indicates that the sample was collected in 1998 at LBNSY). Each sampling location was assigned a unique location identification, which is the second character set in the sample name. The third character set of the sample identification represents the type of sample (i.e., S for soil sample, W for water sample, L for liquid sample, B for wood block sample, and P for wipe sample). The final sample character represents the sample depth.

The following is an example of a sample number:

98SY-XXXx-S-2

98SY	=	1998, Long Beach Naval Shipyard
XXXx	=	Location XXXx (AOC identifier [3 characters] then location number at that AOC)
S	=	Soil sample
2	=	Depth to top of sampling interval (2 feet bgs)

Samples were labeled with the following information: sample ID, analyses required, sample matrix, preservative, date and time sampled, and the initials of CDM Federal employees who performed the sampling. For groundwater samples, labels were affixed to the containers and taped with clear packing tape immediately before the sample was collected to avoid water damaging the label. For soil and sediment samples, labels were taped after sampling.

Sample containers were placed in self-sealing plastic bubble bags. Sample IDs and analytical requests were recorded on the appropriate chain-of-custody (COC) form, and containers were packed in a cooler containing double-bagged ice to maintain the samples as close as possible to 4°C.

3.3.11 Decontamination

All nondisposable equipment, including soil sampling sleeves, push rods, bailers, well screens, and soil sleeves was decontaminated before the start of work and between sampling locations in accordance with CDM Federal Standard Operating Procedures (SOPs) presented in the Work Plan (CDM Federal 1998a) and summarized below.

Four 5-gallon buckets, placed on a 4-foot by 6-foot plastic sheet, were used for decontamination. Equipment was scrubbed in the first bucket, containing Alconox detergent and tap water, then rinsed separately in tap water in the next two buckets. Finally, equipment was sprayed with deionized water and then sprayed with methanol to enhance VOC evaporation. All excess liquids were drained into the fourth bucket.

At the end of the day, all decontamination water was contained in 55-gallon drums on pallets in an area designated for temporary storage of IDW. The first bucket was emptied into the drum, then the second bucket was emptied into the first, the third into the second, the fourth into the third, and the process repeated until all buckets were empty. The buckets were then rinsed with water and emptied in the same manner. TEG decontaminated the Strataprobe™ DPT equipment (carbon steel sampling rods and stainless steel bailers) as described above.

3.3.12 Investigation-Derived Waste Management

IDW generated during this project consisted of the following: wastewater from decontamination activities; soil extruded from sample sleeves following lithologic logging; tubing and filters used with the peristaltic pump for groundwater sampling; plastic sheeting, paper towels, and duct tape; and personal protective equipment (PPE), such as nitrile gloves.

Water IDW was placed in one 55-gallon drum, while soil IDW was stored in self-sealing plastic bags in another drum. All drums were identified with white labels indicating date of collection, type of waste, generator, and the phrase "pending analysis." All drums were stored at a location behind a locked chain-link fence at Building 205. An inventory of IDW temporarily stored in the drums is presented in Appendix H. After receipt of laboratory analyses of the contents, all IDW was classified as nonhazardous.

Water IDW generated during June 1998 was treated at the Naval Exchange (NEX) groundwater treatment system. Water IDW from February and March 1999 sampling was disposed offsite by a subcontractor on 20 May 1999. Soil IDW was disposed as regular trash.

Tubing, filters, plastic sheeting, paper towels, duct tape, and PPE were placed in new trash bags daily, then disposed as nonhazardous waste.

3.3.13 Land Surveying

A licensed land surveyor, Towill Incorporated of Tustin, California, surveyed all sampling locations. Locations were referenced to Long Beach Harbor benchmarks for horizontal and vertical control. The locations were referenced to the California Lambert System (California State Plane Coordinate System) to the nearest 0.01 foot. Ground surface elevations were surveyed to MLLW, to the nearest 0.01-foot. MLLW is the official tidal datum plane for hydrographic surveys in the Long Beach and Los Angeles harbor areas (BNI 1997a); the MLLW datum corresponds to an elevation of -2.80 feet mean sea level (MSL), which is the 1929 National Geodetic Vertical Datum (BNI 1997a).

Surveying was performed from 4 to 5 August 1998 and 28 to 29 April 1999. Location surveying data are presented in Appendix I.

3.4 LABORATORY ANALYSIS

Laboratory analyses were based on the types of potential contaminants that may exist at the various AOCs sampled. Common AOC processes and related COPCs are listed in Table 3-1. The actual analyses requested and performed for each sample are identified in Section 4.0 and Appendix K.

Samples collected for this project were analyzed by Applied Physics and Chemistry Laboratory (APCL) of Chino, California. APCL is a Naval Facilities and Engineering Service Center (NFESC)-approved laboratory. The analytical methods performed by APCL for this project are listed in Table 3-2. Dioxins analysis was conducted by Southwest Laboratory of Oklahoma of Broken Arrow, Oklahoma. Validated analytical results are presented in Appendix O. Samples collected by POLB for three AOCs (ADD 3, ADD 6, and ADD 7) were analyzed by Calscience Environmental Laboratories, Inc. (Appendix P).

3.5 QUALITY ASSURANCE

The following sections describe quality assurance (QA) methodologies and procedures, field quality control, laboratory quality control (QC), and data validation.

3.5.1 Field Quality Control

Field QC samples collected included trip blanks, field blanks, equipment rinsate blanks, and field duplicates. All QC samples were collected and handled in accordance with the project-specific FSP and QAPP (CDM Federal 1998a) and CDM Federal SOPs (CDM Federal 1998a). Field QC sample results are presented in Appendix J of this report.

3.5.1.1 Trip Blanks

Trip blank samples were provided by the analytical laboratory in presealed, 40-ml vials with Teflon™ septa. Each vial was filled with American Society for Testing and Materials (ASTM) deionized water and preserved with 1:1 hydrochloric acid (HCl). Trip blanks were included in each cooler that contained samples for VOCs analysis. Trip blank samples were analyzed to check whether any potential contaminants had been introduced into site samples during sample shipping to the analytical laboratory. Trip blanks were analyzed for VOCs only (CDM Federal 1998a). Fifteen trip blanks were collected during the 10 to 18 June 1998 and 23 February to 10 March 1999 sampling events. Field QC sample results are summarized in Appendix J of this report.

3.5.1.2 Field Blanks

Two water field blank samples were collected (one during each of the two sampling events [June 1998 and February–March 1999]) to assess whether any contamination existed in the ASTM deionized water used for final equipment decontamination or in the precleaned sample containers supplied by the analytical laboratory. The field blank consisted of ASTM water that was poured from the original container directly into the respective sample containers for laboratory analysis.

Two PCB wipe field blank samples were collected (one during each of the two sampling events [June 1998 and February–March 1999]) to assess whether any contamination existed in the hexane-soaked gauze pad provided by the laboratory.

Field QC sample results are summarized in Appendix J of this report.

3.5.1.3 Equipment Rinsate Blanks

Equipment rinsate blanks were collected to assess whether any cross-contamination from sampling equipment may have occurred. An equipment rinsate blank was collected from each type of sampling equipment listed below and was analyzed for the same analytes as samples collected at the AOCs during the same sampling event. The following equipment rinsate samples were collected:

- Groundwater sampling: stainless steel bailer for VOCs sampling (two samples, one during each event);
- Groundwater sampling: silicon tubing for other analyses (collected during the June 1998 sampling event to verify whether the certification of cleanliness provided by the supplier was accurate); and
- Soil sampling: steel push rods and stainless steel sleeves (two samples, one during each event).

Before collecting the rinsate blanks, the sampling equipment was decontaminated according to procedures described in Section 3.3.11 (except for the new, clean silicon tubing used for each groundwater sample collected). Rinsate blanks were collected by directly pouring ASTM decontamination water over and through the sampling equipment and into each respective sample container. Field QC sample results are summarized in Appendix J of this report.

Equipment rinsate samples were not necessary for sediment sampling because sediment was scooped directly into clean, new sampling jars provided by the laboratory with certificates of cleanliness. Equipment rinsate samples were not necessary for PCB wipe sampling because only new gloves were used to handle each sample. Equipment rinsate samples were not necessary for wood block sampling because new drill bits were used for each sample.

3.5.1.4 Field Duplicates

Field duplicate samples were collected at a frequency of one duplicate per 10 samples for each analytical test per medium (e.g., for every 10 soil samples analyzed for VOCs, one duplicate soil sample was collected and analyzed for VOCs). The number of duplicates collected was rounded up to enhance quality control. Duplicate samples were collected for soil, groundwater, sediment, and PCB wipe matrices. Duplicate samples were collected at the same location as the original sample but were assigned a different sample identification number and shipped to the analytical laboratory "blind." Duplicate samples were collected as follows:

- Groundwater: immediately after the original sample, from the same location;
- Soil: either 1 foot deeper than the original sample or at the same depth from a separate hole within 6 inches of the original sample location;
- Sediment: immediately after the original sample, from the same location;
- PCB Wipes: within 6 inches of the original sample.

3.5.2 Laboratory Quality Control

Analytical results for laboratory quality control samples including method blanks, matrix spike/matrix spike duplicate (MS/MSDs), laboratory control sample (LCS)/LCS duplicates (LCSDs), and surrogates were checked during the data validation process (Section 3.5.3). Laboratory instruments were calibrated according to the analytical method requirements and the calibration records were also validated as described in Section 3.5.3.

Additional sample volume for laboratory MS/MSD analyses (used by the laboratory once per batch of 20 or less samples to assess whether the soil matrix had affected extractability of analytes and results) were collected for laboratory QC analyses. MS/MSD volumes typically included two to three times the original sample and were assigned the same sample identification number. Each MS/MSD sample was marked "MS/MSD" in the "Remarks" section of the COC form to inform the lab that MS/MSD volume was collected.

Completed COC forms are included in Appendix M. Soil sample results were reported in dry weight to eliminate effects of soil moisture on sample results.

3.5.3 Data Validation

Data validation was performed by Laboratory Data Consultants (LDC) of Carlsbad, California. Data validation was performed according to the following guidelines:

- *U.S. EPA Contract Laboratory Program National Functional Guidelines for Evaluating Organic Analyses* (U.S. EPA 1994a);
- *U.S. EPA Contract Laboratory Program National Functional Guidelines for Evaluating Inorganic Analyses* (U.S. EPA 1994b); and
- Interim Guidance Document *Navy Installation Restoration Laboratory Quality Assurance Guide* (NFESC 1996).

Raw data were validated for ten percent of the sample analyses per matrix; raw data validation followed U.S. EPA Level IV QC (formerly designated as Navy "Level D"). The remaining 90 percent of the data were validated for other QC criteria not including raw data, following

U.S. EPA Level III QC (formerly designated as Navy "Level C"). This data validation strategy followed SWDIV Policy Memorandum No. 13 for non-NPL sites (SWDIV 1996).

Of the ten percent selected for comprehensive raw data validation, approximately half were selected based on relatively high analyte concentrations or unexpected results, while the other half were selected randomly. The samples selected for raw data (i.e., Level IV) validation are identified in Appendix O.

The following qualifiers or a combination of these qualifiers were assigned to sample results as necessary:

J	Estimated concentration
U	Not detected (i.e., undetected)
N	Analyte identity uncertain
R	Rejected data(i.e., unusable)

Data validation reports are compiled in Appendix O and a summary of data validation results are presented at the beginning of Appendix O. Data validation results and the usability of data are summarized for each AOC in Section 4.0.

3.6 BACKGROUND METALS ASSESSMENT

Background metals data used for screening soil and groundwater sampling results were obtained from the 1997 LBNSY Remedial Investigation (RI) Report (BNI 1997a). Excerpts from the 1997 LBNSY RI Report are presented in Appendix L. The process is summarized below.

Approximately 100 sample results from past sampling projects at LBNSY and NAVSTA were used to identify statistical background levels (BNI 1997a). First, to identify a background population for each metal, sample concentration data were plotted and outlier concentrations associated with known or suspected contaminated areas were eliminated. Second, appropriate statistical procedures were used to calculate background levels. Third, sample concentration data were evaluated to assess whether a geochemical background level exists for each metal; if so, the geochemical background level superseded the statistical background level for that metal.

No independent verification of the background metals levels calculated by BNI was performed for the Group B AOCs Investigation because (1) the levels received regulatory approval and (2) this project did not generate sufficient data to support or refute the established background levels.

3.7 SCREENING CRITERIA FOR SAMPLE RESULTS

Laboratory analytical results for organic compounds detected in soil, sediment, and groundwater samples collected during the field investigation were compared to the screening criteria listed in Table 3-3. Metals results were compared to the screening criteria listed in Table 3-4. The results of the comparisons are presented in Section 4.0 for each AOC. Appendix A contains excerpts of screening criteria from source documents.

Soil sample analytical results for VOCs, SVOCs, metals, PCBs, cyanide, and hexavalent chromium were compared to U.S. EPA Region IX Industrial Preliminary Remediation Goals (PRGs) for soil (U.S. EPA 1998). Analytical results for metals were also compared to LBNSY background levels (BNI, 1997a) because metals occur naturally in soil and groundwater. Only sample metals results that exceeded both the industrial PRG and the background level were considered to have exceeded screening criteria.

Detected soil concentrations of TPH-gasoline, -diesel, and -motor oil were compared to LA RWQCB closure criteria for soils impacted by leaking underground storage tanks (RWQCB 1996a). The criteria were designed for sites situated above drinking water sources (not the case at LBNSY, as discussed in Section 1.4), and the use of these criteria for TPH is no longer sanctioned by the Los Angeles RWQCB (RWQCB 1996b). Since no other TPH criteria were applicable, these RWQCB criteria were used for comparison.

Analytical results for dioxin in soil were first compared to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) using Toxicity Equivalency Factor (TEF) values. These TEF values, listed in Table 3-5, are used in assessing risks associated with mixtures of dioxin and furan isomers that are not as toxic as TCDD. With the TEF values, concentrations of non-TCDD dioxin and furan isomers can be compared to an equivalent toxicity for TCDD. The concentration of each analyzed dioxin was multiplied by its associated TEF value and these results were summed to derive a total TEF concentration as described in EPA's *Estimating Exposure to Dioxin-Like Compounds* of June 1994 (External Review Draft). These totals were compared to the U.S. EPA Region IX Industrial PRG for TCDD (U.S. EPA 1998) for soil samples.

Analytical results for groundwater samples collected during the field investigation were compared to the following two criteria:

- Ocean Plan Water Quality Objectives for marine aquatic life and human health protection (SWRCB 1997). These criteria are concentrations that "shall not be exceeded in the receiving water." They are not specifically effluent limitations (SWRCB 1997) but have been conservatively applied to groundwater beneath LBNSY because shallow groundwater is hydraulically connected to the ocean. For groundwater samples, the criteria for protection of marine aquatic life are more applicable than criteria for human health protection because humans should not swim or fish in the harbor, as discussed in Section 2.4; and

- LBNSY background levels for metals (BNI 1997a) listed in Appendix L. Only sample metals results that exceeded both the Ocean Plan criteria and the background level were considered to have exceeded screening criteria.

Where Ocean Plan criteria were not available for a given analyte, the analytical results were compared *for information purposes* to State Maximum Contaminant Levels (MCLs) for drinking water, as listed in the Los Angeles Basin Plan (RWQCB 1994). If Ocean Plan and Los Angeles Basin Plan criteria were not available for an analyte detected in groundwater samples, the analytical results were compared *for information purposes* to U. S. EPA Region IX PRGs for drinking water (U.S. EPA 1998).

The criteria for assessing hazard classification (i.e., Resource Conservation and Recovery Act [RCRA] hazardous or California hazardous, or nonhazardous) for liquid and wood blocks, as well as soil or sediment recommended for removal and disposal, was to compare laboratory results to the criteria listed in 40 Code of Federal Regulations (CFR) Part 261 and California Regulation Title 22, Division 4.5, Chapter 11. Because EPA RCRA criteria are for toxicity characteristic leaching procedure (TCLP) results (in mg/L units), but TCLP testing was not performed for this project, the solvent to sample mass ratio of 1:20 was used to develop a 20-times TCLP screening criteria in units of mg/kg that can be applied to soil samples.

3.8 DATA MANAGEMENT

Data were received from the analytical laboratory on computer diskettes as an electronic data deliverable (EDD) in a modified Navy Environmental Data Transfer Standard (NEDTS). Data were verified manually against the hard copy laboratory reports for accuracy, then were submitted with the final report to SWDIV in NEDTS format.

Table 3-1
Activities and Potential Contaminants

Process/Activity	Potential Contaminants
Plating Shop Process Tanks	Metals, hexavalent chromium, cyanide, chlorinated solvents (i.e., VOCs), acids
Quenching Dip Tank	Metals, petroleum hydrocarbons, SVOCs including PAHs, PCBs, dioxins[a], VOCs
Cleaning Dip Tanks	Metals, VOCs
Plasma Arc Cutting Tank	Metals
PCB-Containing Oils	PCBs
Wood Floors - Many Processes	VOCs, SVOCs, metals, PCBs, petroleum hydrocarbons, cyanide, dioxins[a]

Notes:

Analyses selected for historical sites, underground storage tanks sites, and other miscellaneous sites were dependent on the types of hazardous materials used and wastes generated. Approval from regulatory agencies was received for the selected analyses (CDM Federal 1998a and 1999).

(a) Selected samples.

PAHs = Polynuclear Aromatic Hydrocarbons
PCB = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
VOCs = Volatile Organic Compounds

Table 3-2
Analytical Methods

Analysis	U.S. EPA Method Number
Volatile Organic Compounds (VOCs)	8260B
Semivolatile Organic Compounds (SVOCs)	8270C
17 California Title 22 Metals	6010 for all metals, except mercury by 7470/7471
Polychlorinated Biphenyls (PCBs)	8082
TPH-gasoline [a]	8015 modified, 5030 purge and trap
TPH-extractables (diesel and motor oil) [a]	8015 modified, 3550 extraction
Cyanide	9010A
Hexavalent Chromium	7196A
Dioxins	8280A
pH	9040/9045

Notes:

(a) Results are presented as TPH in the general ranges of gasoline, diesel, and motor oil. This does not imply that the contaminant is precisely gasoline, diesel, or motor oil, just that they share the same carbon ranges (gasoline approximately C_2 to C_6), diesel approximately C_7 to C_{24}, motor oil approximately C_{24} to C_{36}.

TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency

Table 3-3
Screening Criteria for Detected Organic Compounds

	SOIL	GROUNDWATER				LIQUID AND SOLID HAZARDOUS WASTE CHARACTERIZATION			
Detected Organic Analyte	**Industrial Soil PRG[a] (mg/kg)**	**Ocean Plan Criteria[b] (mg/L)**		**RWQCB Basin Plan Criteria[c] (mg/L)**	**Tap Water PRG[a] (mg/L)**	**State of California Regulatory Levels[j] (mg/L)**	**US EPA RCRA Criteria[k] (mg/L)**	**State of California Regulatory Levels[j] (mg/kg)**	**US EPA RCRA Criteria[k] (mg/kg)**
		Marine Aquatic Life	**Human Health**	***(for informational purposes only)***	***(for informational purposes only)***	**Liquid**	**Liquid**	**Solid**	**Solid [l]**
VOCs									
Carbon Tetrachloride	0.52	NA	0.0009	*0.0005*	*0.00017*	NA	0.5	NA	10
Chloroform	0.52	NA	0.130	*NA*	*0.00016*	NA	6.0	NA	120
Chloromethane	2.6	NA	NA	*NA*	*0.0015*	NA	NA	NA	NA
Cis-1,2-Dichloroethene	150	NA	NA	*0.006*	*0.061*	NA	NA	NA	NA
1,3-Dichlorobenzene	140	NA	5100	*NA*	*0.017*	NA	NA	NA	NA
1,1-Dichloroethane	2,000	NA	NA	*0.005*	*0.81*	NA	NA	NA	NA
1,1-Dichloroethene	0.12	NA	7.1	*0.006*	*$4.6x10^{-5}$*	NA	0.7	NA	14
Ethylbenzene	230	NA	4.1	*0.7*	*1.3*	NA	NA	NA	NA
Methylene Chloride	20	NA	NA	*NA*	*0.0043*	NA	NA	NA	NA
Methyl Tertiary Butyl Ether (MTBE)	NA	NA	NA	*NA*	*0.035[m]*	NA	NA	NA	NA
Naphthalene[d]	190	NA	NA	*NA*	*0.0062*	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
Tetrachloroethene	16	NA	0.099	*0.005*	*0.0011*	NA	0.7	NA	14
Toluene	520	NA	85	*0.15*	*0.72*	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
Trichloroethene	6.1	NA	0.027	*0.005*	*0.0016*	204	0.5	2,040	10
1,1,1-Trichloroethane	1,400	NA	540	*0.2*	*0.79*	NA	NA	NA	NA
1,2,4-Trimethylbenzene	170	NA	NA	*NA*	*0.012*	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	NA	NA	*NA*	*0.012*	NA	NA	NA	NA
m-Xylene	210	NA	NA	*1.75*	*1.4*	NA	NA	NA	NA
o-Xylene	280	NA	NA	*1.75*	*1.4*	NA	NA	NA	NA
P-Xylene	370	NA	NA	*1.75*	*NA*	NA	NA	NA	NA
SVOCs									
Acenaphthene	28,000	NA	$8.8x10^{-6}$ [h]	*NA*	*0.37*	NA	NA	NA	NA
Acenaphthylene	28,000	NA	$8.8x10^{-6}$ [h]	*NA*	*0.37*	NA	NA	NA	NA
4-Aminobiphenyl	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
Anthracene	220,000	NA	$8.8x10^{-6}$ [h]	*NA*	*1.8*	NA	NA	NA	NA
Benz(a)anthracene	3.6	NA	$8.8x10^{-6}$ [h]	*NA*	*$9.2x10^{-5}$*	NA	NA	NA	NA
Benzo(a)pyrene	0.36	NA	$8.8x10^{-6}$ [h]	*0.0002*	*$9.2x10^{-6}$*	NA	NA	NA	NA

Table 3-3 (continued)
Screening Criteria for Detected Organic Compounds

	SOIL	GROUNDWATER				LIQUID AND SOLID HAZARDOUS WASTE CHARACTERIZATION			
Detected Organic Analyte	**Industrial Soil PRG[a] (mg/kg)**	**Ocean Plan Criteria[b] (mg/L)**		**RWQCB Basin Plan Criteria[c] (mg/L)**	**Tap Water PRG[a] (mg/L)**	**State of California Regulatory Levels[j] (mg/L)**	**US EPA RCRA Criteria[k] (mg/L)**	**State of California Regulatory Levels[j] (mg/kg)**	**US EPA RCRA Criteria[k] (mg/kg)**
		Marine Aquatic Life	**Human Health**	***(for informational purposes only)***	***(for informational purposes only)***	**Liquid**	**Liquid**	**Solid**	**Solid [l]**
Benzo(b)fluoranthene	3.6	NA	$8.8x10^{-6}$ [h]	*NA*	$9.2x10^{-5}$	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	$8.8x10^{-6}$ [h]	*NA*	*NA*	NA	NA	NA	NA
Benzo(k)fluoranthene	36	NA	$8.8x10^{-6}$ [h]	*NA*	$9.2x10^{-5}$	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	7.4	NA	1.2	*NA*	*0.00027*	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	210	NA	0.0035	*0.004*	*0.0048*	NA	NA	NA	NA
Butyl Benzyl Phthalate	930	NA	NA	*NA*	*7.3*	NA	NA	NA	NA
2-Chloronaphthalene	24,000	NA	NA	*NA*	*0.49*	NA	NA	NA	NA
Chrysene	360	NA	$8.8x10^{-6}$ [h]	*NA*	*0.0092*	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.36	NA	$8.8x10^{-6}$ [h]	*NA*	$9.2x10^{-5}$	NA	NA	NA	NA
Dibenz(a,j)acridine	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
Dibenzofuran	3,200	NA	NA	*NA*	*0.024*	NA	NA	NA	NA
Diethylphthalate	100,000	NA	33	*NA*	*29*	NA	NA	NA	NA
2,4-Dimethylphenol	21,000	0.3	NA	*NA*	*0.73*	NA	NA	NA	NA
Di-n-butyl Phthalate (DBP)	110,000	NA	3.5	*NA*	*NA*	NA	NA	NA	NA
Di-n-octyl phthalate	10,000	NA	NA	*NA*	*0.73*	NA	NA	NA	NA
Fluoranthene	37,000	NA	0.015	*NA*	*1.5*	NA	NA	NA	NA
Fluorene	22,000	NA	$8.8x10^{-6}$ [h]	*NA*	*0.24*	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	3.6	NA	$8.8x10^{-6}$ [h]	*NA*	$9.2x10^{-5}$	NA	NA	NA	NA
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
3/4-Methylphenol (m/p-Cresol)	5,300	NA	NA	*NA*	*0.18*	NA	200	NA	4,000
2 Methylphenol (o-Cresol)	53,000	NA	NA	*NA*	*1.8*	NA	200	NA	4,000
Naphthalene[d]	190	NA	NA	*NA*	*0.0062*	NA	NA	NA	NA
Phenanthrene	NA	NA	$8.8x10^{-6}$ [h]	*NA*	*NA*	NA	NA	NA	NA
Phenol	100,000	0.3	NA	*NA*	*22*	NA	NA	NA	NA
2-Picoline	NA	NA	NA	*NA*	*NA*	NA	NA	NA	NA
Pyrene	26,000	NA	$8.8x10^{-6}$ [h]	*NA*	*0.18*	NA	NA	NA	NA
TPH									
TPH-Gasoline	1,000 [e]	NA	NA	*NA*	*NA*	NA	NA	NA	NA
TPH-Diesel	10,000 [e]	NA	NA	*NA*	*NA*	NA	NA	NA	NA

Table 3-3 (continued)
Screening Criteria for Detected Organic Compounds

	SOIL	GROUNDWATER				LIQUID AND SOLID HAZARDOUS WASTE CHARACTERIZATION			
Detected Organic Analyte	**Industrial Soil PRG[a] (mg/kg)**	**Ocean Plan Criteria[b] (mg/L)**		**RWQCB Basin Plan Criteria[c] (mg/L)**	**Tap Water PRG[a] (mg/L)**	**State of California Regulatory Levels[j] (mg/L)**	**US EPA RCRA Criteria[k] (mg/L)**	**State of California Regulatory Levels[j] (mg/kg)**	**US EPA RCRA Criteria[k] (mg/kg)**
		Marine Aquatic Life	**Human Health**	***(for informational purposes only)***	***(for informational purposes only)***	**Liquid**	**Liquid**	**Solid**	**Solid [l]**
TPH-Motor Oil	50,000 [e]	NA	25 [f]	*NA*	*NA*	NA	NA	NA	NA
PCBs									
Aroclor 1248	1.3 [g]	NA	$1.9x10^{-8}$	*0.0005[g]*	*$3.4x10^{-5}$*	5	50[i]	50	500[i]
Aroclor 1260	1.3 [g]	NA	$1.9x10^{-8}$	*0.0005[g]*	*$3.4x10^{-5}$*	5	50[i]	50	500[i]
Dioxins									
2,3,7,8-TCDD equivalents	$3.0x10^{-5}$	NA	$3.9x10^{-12}$	*$3.0x10^{-8}$*	*$4.5x10^{-7}$*	0.001	NA	0.01	NA

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998. Tap water PRG provided for informational purposes only.
(b) From State Water Resources Control Board, *California Ocean Plan,* dated July 23, 1997.
(c) From Los Angeles Regional Water Quality Control Board, *Basin Plan,* dated June 13, 1994; criteria presented are for waters designated for use as domestic or municipal supply. For informational purposes only.
(d) Naphthalene was detected by both methods U.S. EPA 8260B and 8270C.
(e) From Los Angeles Regional Water Quality Control Board *Interim Site Assessment and Cleanup Guidebook,* dated May 1996. Values are for soils >150 feet above the nearest drinking water aquifer.
(f) Based on a 30-day average.
(g) Value is for total PCBs.
(h) Value is expressed as the sum of the following 13 polynuclear aromatic hydrocarbons (PAHs): acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]-pyrene, phenanthrene, and pyrene.
(i) From TSCA (40 CFR 761) - Polychlorinated Biphenyls Spill Cleanup Policy.
(j) From California Title 22, Division 4.5, Chapter 11, Article 3, Section 66 261.24. STLC criteria for liquids, TTLC criteria for solids.
(k) From 40 CFR 261.24 – Toxicity Characteristic.
(l) 20 times liquid criteria for solids, based on 20:1 ratio of solvent to waste as part of the Toxicity Characteristic Leaching Procedure analytical method, EPA Method 1311.
(m) Methyl Tertiary Butyl Ether (MTBE) action level set by the California Department of Health Services. A Secondary Maximum Contaminant Level of 0.005 mg/L was established in January 1999. The U.S. EPA has established a Drinking Water Advisory criteria of 0.020 to 0.040 mg/L (U.S. EPA 1997).

CFR = Code of Federal Regulations
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
PCBs = Polychlorinated Biphenyls
PRG = Preliminary Remediation Goal
NA = Not Available
RCRA = Resource Conservation and Recovery Act
RWQCB = Los Angeles Regional Water Quality Control Board
STLC = Soluble Threshold Limit Concentration
SVOCs = Semivolatile Organic Compounds
TCDD = Tetrachlorodibenzodioxin
TPH = Total Petroleum Hydrocarbons
TSCA = Toxic Substances Control Act
TTLC = Total Threshold Limit Concentration
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 3-4
Screening Criteria for Detected Inorganic Analytes

	SOIL		GROUNDWATER					LIQUID AND SOLID HAZARDOUS WASTE CHARACTERIZATION			
Analyte	**Industrial Soil PRG [a] (mg/kg)**	**Background Level for Soil[b] (mg/kg)**	**Ocean Plan Criteria [c] (mg/L)**		**RWQCB Basin Plan Criteria[d] (mg/L)**	**Tap Water PRG[a] (mg/L)**	**Background Level for Water[b] (mg/L)**	**State of California Regulatory Levels[j] (mg/L)**	**US EPA RCRA Criteria[k] (mg/L)**	**State of California Regulatory Levels[j] (mg/kg)**	**US EPA RCRA Criteria[k] (mg/kg)**
			Marine Aquatic Life[a]	Human Health	*(for informational purposes only)*	*(for informational purposes only)*		Liquid	Liquid	Solid	Solid [l]
Antimony	750	11.3	NA	1.2	*0.006*	*0.015*	0.0616	15	NA	500	NA
Arsenic	3.0 [e]	17.5	0.008	NA	*0.05*	*$4.5x10^{-5}$*	0.0276	5	5	500	100
Barium	100,000	275.0	NA	NA	*1*	*2.6*	0.1777	100	100	10,000	2,000
Beryllium	3,400	1.4	NA	$3.3x10^{-5}$	*0.004*	*0.073*	0.002	0.75	NA	75	NA
Cadmium	930	1.7	0.001	NA	*0.005*	*0.018*	0.0017	1	1	100	20
Chromium	450	60.9	190	NA	*0.05*	*NA*	0.0029	5	5	2,500	100
Cr^{+6}	64	NA	0.002	NA	*NA*	*0.18*	NA	5	NA	500	NA
Cobalt	29,000	24.5	NA	NA	*NA*	*2.2*	0.0071	80	NA	8,000	NA
Copper	70,000	798.7	0.003	NA	*NA*	*1.4*	0.1072	25	NA	2,500	NA
Lead	1,000	185.2	0.002	NA	*NA*	*0.004*	0.028	5	5	1,000	100
Mercury	560	2.5	$4.0x10^{-5}$	NA	*0.002*	*0.011*	0.0009	0.2	0.2	20	4
Molybdenum	9,400	NA	NA	NA	*NA*	*0.18*	NA	350	NA	3,500	NA
Nickel	37,000	32.6	0.005	NA	*0.1*	*0.73*	0.0958	20	NA	2,000	NA
Selenium	9,400	1.4	0.015	NA	*0.05*	*0.18*	0.04	1	1	100	20
Silver	9,400	1.5	0.0007	NA	*NA*	*0.18*	0.0072	5	5	500	100
Thallium	150 [f]	4.2	NA	0.014	*0.002*	*0.0029[f]*	0.0075	7	NA	700	NA
Tin[g]	100,000	NA	NA	NA	*NA*	*22*	NA	NA	NA	NA	NA

Table 3-4 (continued)
Screening Criteria for Detected Inorganic Analytes

	SOIL		GROUNDWATER					LIQUID AND SOLID HAZARDOUS WASTE CHARACTERIZATION			
Analyte	Industrial Soil PRG [a] (mg/kg)	Background Level for Soil[b] (mg/kg)	Ocean Plan Criteria [c] (mg/L)		RWQCB Basin Plan Criteria[d] (mg/L)	Tap Water PRG[a] (mg/L)	Background Level for Water[b] (mg/L)	State of California Regulatory Levels[j] (mg/L)	US EPA RCRA Criteria[k] (mg/L)	State of California Regulatory Levels[j] (mg/kg)	US EPA RCRA Criteria[k] (mg/kg)
			Marine Aquatic Life[h]	Human Health	*(for informational purposes only)*	*(for informational purposes only)*		Liquid	Liquid	Solid	Solid [l]
Vanadium	13,000	84.9	NA	NA	*NA*	*0.26*	0.0107	24	NA	2,400	NA
Zinc	100,000	844.9	0.020	NA	*NA*	*11*	0.291	250	NA	5,000	NA
Cyanide	35[i]	NA	0.01	NA	*0.2*	*0.0062[f]*	NA	NA	NA	NA	NA
pH	NA	NA	6 to 9 (pH units)	6 to 9 (pH units)	*6.5 to 8.5 (pH units)*	*NA*	NA	2 to 12.5 (pH units)[m]	2 to 12.5 (pH units)[n]	2 to 12.5 (pH units)[m]	NA

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998. Tap water PRG presented for informational purposes only.
(b) Background levels are listed in Appendix L.
(c) From State Water Resources Control Board *California Ocean Plan,* dated July 23, 1997.
(d) From Los Angeles Regional Water Quality Control Board, *Basin Plan*, dated June 13, 1994 Table 3-5; criteria presented are for waters designated for domestic or municipal supply. For informational purposes only.
(e) Arsenic cancer endpoint from U.S. EPA PRG table (U.S. EPA 1998).
(f) Most conservative value from multiple thallium compounds listed in the U.S. EPA PRG table (U.S. EPA 1998).
(g) Inorganic tin.
(h) 6 month median criteria.
(i) Total Cyanide criteria. Listed values are the most conservative values for various forms of cyanide (U.S. EPA 1998).
(j) From California Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24. STLC criteria for liquids, TTLC criteria for solids.
(k) From 40 CFR 261.24 – Toxicity Characteristic.
(l) 20 times liquid criteria for solids, based on 20:1 ratio of solvent to waste as part of the Toxicity Characteristic Leaching Procedure analytical method, EPA Method 1311.
(m) From California Title 22, Division 4.5, Chapter 11, Section 66261.22, Characteristics of Corrosivity.
(n) From 40 CFR 261.22 – Characteristics of Corrosivity.

CFR = Code of Federal Regulations
Cr^{+6} = Hexavalent Chromium
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
NA = Not Available
PRG = Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
RCRA = Resource Conservation and Recovery Act
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration
US EPA = United States Environmental Protection Agency

Table 3-5
TCDD Equivalents for Dioxin and Furan Isomers

Isomer Group	Toxicity Equivalency Factor
2,3,7,8-TCDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
Octa CDD	0.001
2,3,7,8-TCDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
Octa CDF	0.001

Notes:

Source: U.S. EPA 1989

CDD = Chlorinated dibenzodioxin
CDF = Chlorinated dibenzofuran
TCDD = Tetrachlorodibenzodioxin
TCDF = Tetrachlorodibenzofuran

Figure 3-1 Utility Detection Equipment (From left: Ground Penetrating Radar, Hand-Held Radio Detector, and Passive Induction Detector) 5/29/98

Figure 3-2 Strataprobe™ Direct Push Soil and Groundwater Sampling 3/3/99

Figure 3-3 Groundwater Sampling (from left: Stainless Steel Bailer and Peristaltic Pump) 6/5/98

Figure 3-4 PCB Wipe Sampling 6/17/98

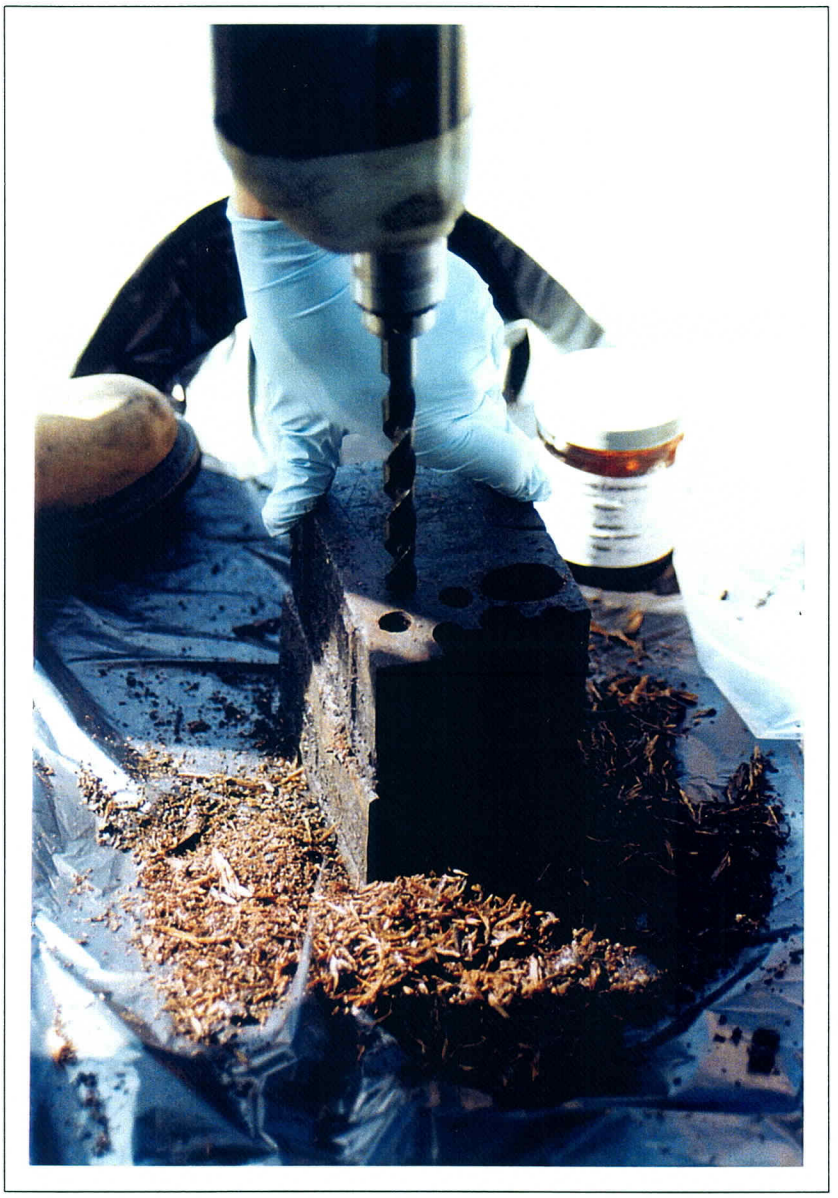


Figure 3-5 Wood Block Floor Sampling 6/18/98

4.0 AREAS OF CONCERN DESCRIPTIONS AND FINDINGS

4.1-4.25 EXPEDITED AOCs

Tabs 1 through 25 cover expedited AOCs that were addressed in a separate report titled *Preliminary Assessment Report for 25 Group B Areas of Concern, Long Beach Naval Shipyard*, dated 23 June 1998. Together, the AOCs addressed in Tabs 1 through 25 (previous report) and Tabs 26 through 196 (171 AOCs in this report) cover all 196 Group B AOCs.

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4.26 SEWER PIT H (AOC SSS 2)

The following paragraphs describe the general sanitary sewer system (SSS) operations applicable to all three sanitary sewer pits. These three pits are Sanitary Sewer Pits H, B, and G (Sections 4.26, 4.27, and 4.28, respectively) and the Sanitary Sewer Holding Tank associated with Building 207 (Section 4.29).

The sanitary sewer system was installed in the mid-1940s, with significant upgrades and expansions through 1987. No basewide replacement of the initial sanitary sewer system was ever performed at LBNSY (Johnson, personnel communication [pers. comm.], 1998). LBNSY sewer lines vary in diameter (the majority are 6 to 12 inches), construction material, and depth (LBNSY-PW 1946). Both gravity and force main sewer lines exist at LBNSY. The gravity sewer lines are typically constructed of clay tile with limited sections of concrete, polyvinyl chloride (PVC), and steel. All of the lines can be accessed by manholes (Empire 1994). Force main lines are constructed of steel and can be accessed only by clean-outs at various locations along the pipeline.

Prior to 1986, sanitary sewer wastes from LBNSY consisted of sanitary sewage from housing units, a laundry, cafeterias, and office buildings, as well as industrial wastewater from maintenance activities and industrial operations (Brown and Caldwell 1969). Various organic and inorganic hazardous substances and residues were discharged to the sewer system over time. In addition, ship bilge water and hull-cleaning process water from the drydocks were discharged to the sanitary sewer system (Brown and Caldwell 1969; Navy Energy and Environmental Support Activity [NEESA] 1983; and Johnson and Nunn, pers. comm., 1998). The sanitary sewer system was addressed in a previous sampling report (CDM Federal 1998d).

Wastewater from LBNSY was transported in a northerly direction by gravity lines to three collection pits (Pits B, G, and H), which are at locations indicated in Figure 4.26-1. These pits acted as lift and pumping stations, directing wastes to the Terminal Island Wastewater Treatment Plant (TIWTP). Sewage was pumped through force mains to Pits K and E (on NAVSTA property to the west of LBNSY) and then through a force main line to the TIWTP located west of LBNSY and NAVSTA (Brown and Caldwell 1969).

Pretreatment facilities were constructed at Pit E in the early 1990s and included the use of hydrochloric acid, sodium hypochlorite, sodium chlorite, and potassium permanganate (for disinfection) solutions (Johnson, pers. comm., 1998). The pretreatment facilities associated with the sewer systems are located on NAVSTA, not LBNSY, property.

A description of Sewer Pit H (AOC SSS 2), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.26.1 to 4.26.4.

4.26.1 Site Description

Table 4.26-1 summarizes the location and characteristics of Sewer Pit H (AOC SSS 2). A site map is provided as Figure 4.26-2, while site photographs are shown in Figures 4.26-3 and 4.26-4.

Table 4.26-1
AOC SSS 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
SSS 2	North of Building 100	C-23	Sanitary sewer pit used for lifting and pumping sewage from LBNSY to the Terminal Island Wastewater Treatment Plant.	One manhole leading to a dry well for servicing the pit. A second manhole (approximately 10 feet east) leading to a wet well.	Dry well is approximately 15 to 20 feet deep including a pump service area of unknown dimensions. Wet well capacity is approximately 1,000 gallons of sewage.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number
SSS = Sanitary Sewer System

A site reconnaissance was performed on 19 March 1998 with the guidance of LBNSY employee Mr. Neil LaFlour (SSS maintenance supervisor). An inspection was conducted by removing the manhole covers and observing both the dry well and the wet well. The dry well consisted of an underground concrete room containing a pump used to discharge sewage into the force main lines. The dry well allowed access for servicing the pump. The wet well consisted of an underground concrete containment structure used to temporarily contain sewage. The site reconnaissance was limited to a visual inspection performed at the ground level due to confined space entry restrictions. No cracks were observed at either the dry well or the wet well. Low sewage flow was observed at the bottom of the wet well, indicating that Pit H and the SSS were still in operation.

4.26.2 Operational History and Waste Characteristics

Table 4.26-2 summarizes the operational history and waste characteristics.

Table 4.26-2
AOC SSS 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
SSS 2	1943 to present (1999)	Sanitary sewer pit used for lifting and pumping sewage to the Terminal Island Wastewater Treatment Plant. Operates using gravity inflow, level meters and force main outflow.	Sanitary sewage, as well as various hazardous and toxic wastes disposed in sinks, sumps, drains, and manholes.	Unknown.

AOC = Area of Concern
No. = Number
SSS = Sanitary Sewer System

Sewage inflow, both domestic and industrial, comes from the gravity sewer lines from the Transportation Yard (Buildings 43, 54, 62, 73, 100, and 122) and Building 101. The sewage is collected in the wet well and is then pumped out into the force mains. Sewage output is regulated using a floating level meter that automatically initiates the pump (Born, et. al. 1983). Sewer Pit H discharges an average of 10,000 gallons per day (Born, et. al. 1983). Maximum flow rates were measured at 60,000 gallons per day (Born, et. al. 1983).

Sanitary sewer pits were cleaned annually using a vacuum truck to remove sediments from the bottom of the wet wells. During cleanings, less than one cubic yard of sediment was usually removed per sewer pit (Johnson, pers. comm., 1998). No sediment or structural cracks were observed in Sanitary Sewer Pit H during the site reconnaissance. Sewer Pit H was not inspected as part of the Sanitary Sewer Inspection (Empire 1994). The pit was last cleaned out in late 1996 (Johnson, pers. comm., 1998). No spills, leaks, or problems were reported for Sanitary Sewer Pit H.

4.26.3 Preliminary Assessment Resources

Table 4.26-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.26-3
AOC SSS 2 Preliminary Assessment Resources Summary

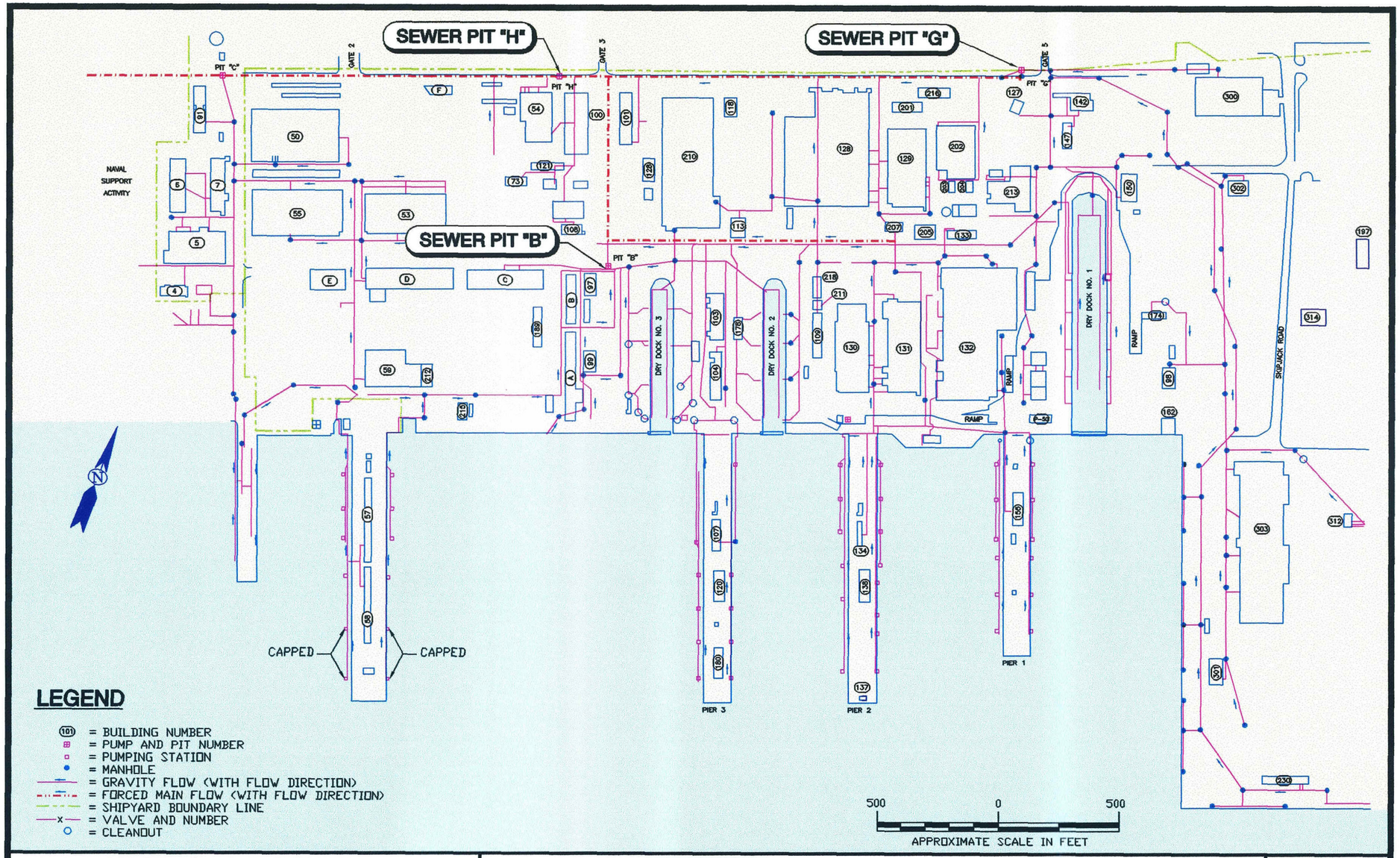
Resource	Date	Source	Summary
Drawing No. 1778	1945	LBNSY-PW	Shows layout of SSS. Fairly extensive coverage of LBNSY.
Industrial Waste Study	1969	Brown and Caldwell	Discusses operation, construction, layout, contributors, and wastes types that went into the sewer during 1969. Includes chemical analyses of raw sewage from LBNSY.
Drawing Microfiche No. 14367	1971	LBNSY-PW	Shows layout of SSS updated through 1971 including the sanitary sewer pits.
Drawing No. 3081	1976, 1987 Update	LBNSY-PW	Shows configuration of sanitary sewers through 1987.
Sewer Connection Project No. P-193	1983	Born, Barrett, & Associates	General inflow and outflow of sanitary sewer pits.
Video Inspection	1994	Empire Pipe Cleaning and Repair	Inspected pipes with video camera after cleaning. Sewer Pit H was not inspected.
Personnel Interview	1998	Johnson and Nunn, LBNSY	Discussed SSS in detail, including age, layout, cleaning activity, flow directions, gravity versus force lines, sanitary sewage, hazardous and toxic waste disposal, and IWTP.
Personnel Interview	1998	Neil LaFlour, LBNSY	Basic operations of sewer pits.

AOC = Area of Concern
IWTP = Industrial Wastewater Treatment Plant
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
No. = Number
SSS = Sanitary Sewer System

4.26.4 PA Recommendations

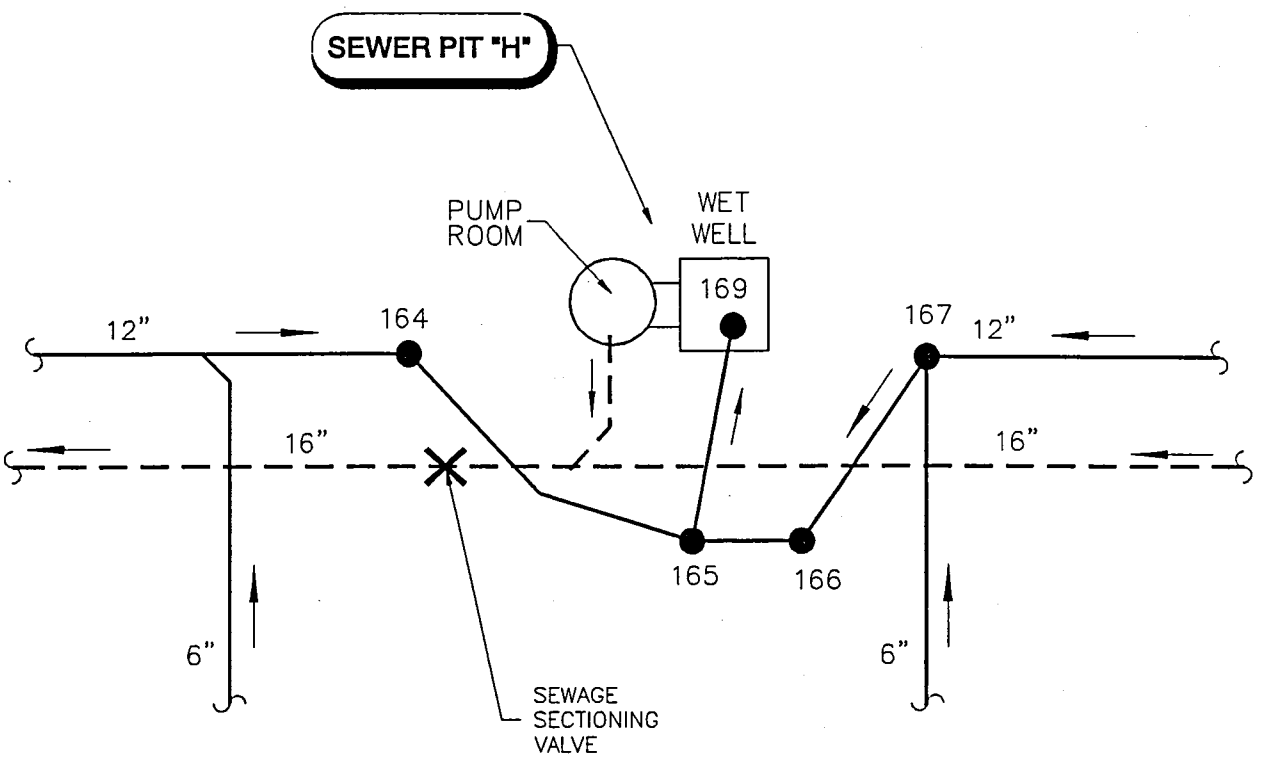
No further action is recommended for AOC SSS 2 based upon the following findings:

- No spills, leaks, or problems were reported;
- The structure is made of concrete;
- No cracks or holes were observed; and
- The sewer pit was cleaned out annually.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SEWER PITS B, G, H AND SANITARY SEWER LINES	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.26-1	GROUP B AREAS OF CONCERN	4.26-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.



LEGEND

- ● = MANHOLE AND NUMBER
- —— = GRAVITY SANITARY SEWER LINE
- – – = FORCE MAIN SANITARY SEWER LINE
- ←—— = FLOW DIRECTION IN PIPE
- 6" = PIPE DIAMETER
- AOC = AREA OF CONCERN
- SSS = SANITARY SEWER SYSTEM

SOURCE: PUBLIC WORKS DRAWING NUMBER 3081 (1976)

NOTE: SEE FIGURE 4.26-1 FOR MAP OF ENTIRE SANITARY SEWER SYSTEM.

NOT TO SCALE

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SSS 2 SEWER PIT "H"	FIGURE 4.26-2
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. — DATE: 5/99 FN: 4.26-2		
MODIFIED BY: J. Brown — PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.26-3 Sanitary Sewer Pit H (AOC SSS 2), Facing North 2/13/98

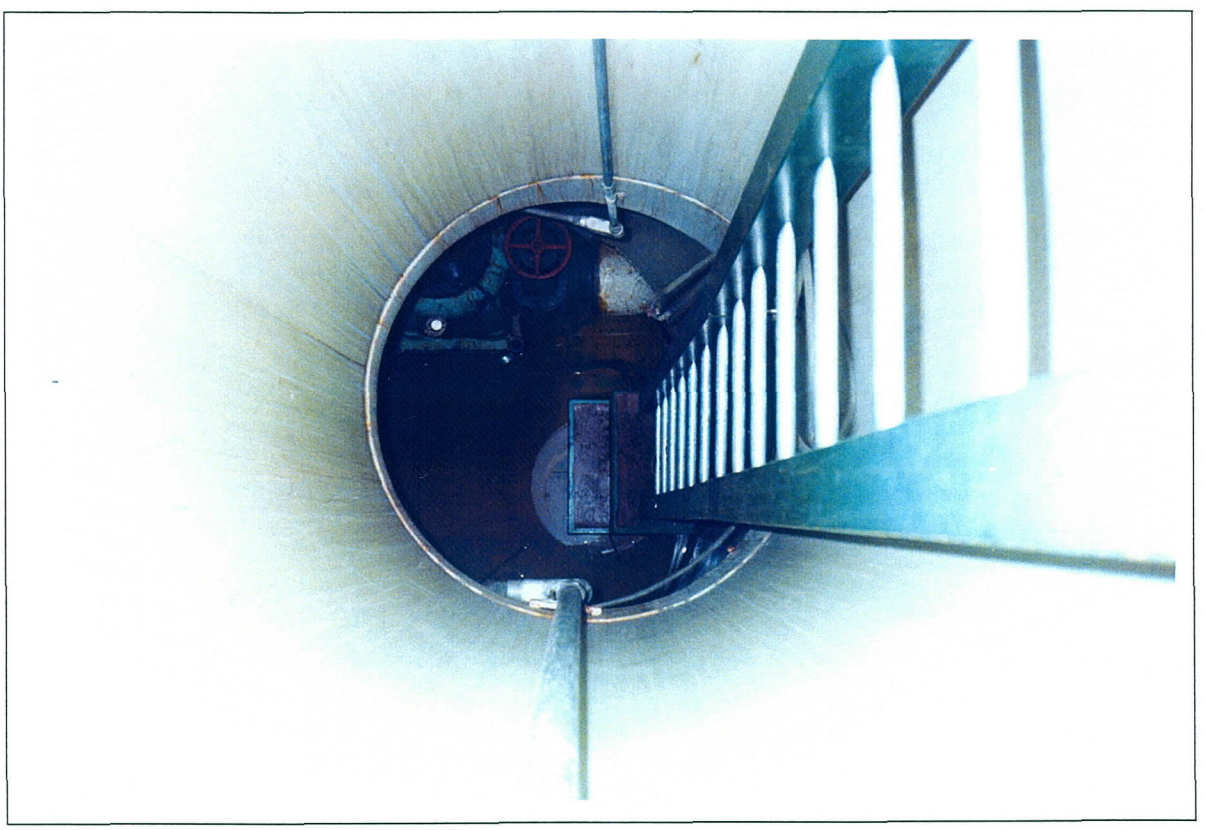

Figure 4.26-4 Sanitary Sewer Pit H (AOC SSS 2), Facing Down 3/19/98

4.27 SEWER PIT B (AOC SSS 3)

General information about all of the sewer pits at LBNSY is discussed in Section 4.26. A description of Sewer Pit B (AOC SSS 3), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.27.1 to 4.27.4.

4.27.1 Site Description

Table 4.27-1 summarizes the location and characteristics of AOC SSS 3. A site map is provided as Figure 4.27-1 and a site photograph is shown in Figure 4.27-2.

Table 4.27-1
AOC SSS 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
SSS 3	Building 115	G-24	Sanitary sewer pit used for lifting and pumping sewage from LBNSY to the Terminal Island Wastewater Treatment Plant.	One manhole leading to a dry well for servicing the pit. One wet well with no aboveground access.	Dry well is approximately 15 to 20 feet deep including a pump service area of unknown dimensions. Wet well capacity is approximately 1,000 gallons of sewage. The bottom of the well is approximately 15 to 20 feet bgs.

AOC = Area of Concern
bgs = Below ground surface
LBNSY = Long Beach Naval Shipyard
No. = Number
SSS = Sanitary Sewer System

A site reconnaissance was performed on 19 March 1998 with the guidance of LBNSY employee Mr. Neil LaFlour (SSS maintenance supervisor). An inspection was conducted by removing the pit cover and observing the dry well. The dry well consisted of an underground concrete room containing a pump used to discharge sewage into the force main lines. The dry well allowed access for servicing the pump. The wet well consisted of an underground concrete containment structure used to temporarily contain sewage. The thickness of the concrete walls is unknown. The site reconnaissance was limited to a visual inspection performed at the ground level due to confined space entry restrictions. No cracks were observed at the dry well; the wet well was unable to be observed due to lack of access. The bottoms of both the dry well and the wet well (approximately 15 to 20 feet bgs) most likely extend into the shallow groundwater (approximately 12 feet bgs).

4.27.2 Operational History and Waste Characteristics

Table 4.27-2 summarizes the operational history and waste characteristics.

Table 4.27-2
AOC SSS 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
SSS 3	1943 to present (1999)	Sanitary sewer pit used as a lift station that discharges to the force main. Operates using gravity inflow, level meters, a pump to lift the sewage, and force main outflow.	Sanitary sewage, as well as various hazardous and toxic wastes disposed in sinks, sumps, drains, and manholes.	Unknown.

AOC = Area of Concern No. = Number SSS = Sanitary Sewer System

Sewage inflow, both domestic and industrial, comes from the gravity sewer lines from Drydock 2, Drydock 3, and Buildings 103, 104, and 210. The sewage is collected in the wet well, lifted using a pump, and then flows to the Holding Tanks (see Section 4.29 of this report) (Born, et. al. 1983). Sewage output is regulated using a floating level meter that automatically initiates the pump (Born, et. al. 1983). Sewage inflow to Pit B and subsequent outflow was highly dependent upon ship sewage discharge activity at Drydocks 2 and 3.

Sanitary sewer pits were cleaned annually using a vacuum truck to remove sediments from the bottom of the wet wells. During cleanings, less than one cubic yard of sediment was usually removed per sewer pit (Johnson, pers. comm., 1998). No sediment or structural cracks were observed in the Sanitary Sewer Pit B dry well during the site reconnaissance. The wet well could not be inspected because of poor access. Sewer Pit B could not be inspected as part of the Sanitary Sewer Inspection (Empire 1994). The pit was last cleaned out in late 1996 (Johnson, pers. comm., 1998). No spills, leaks, or problems were reported for Sanitary Sewer Pit B.

4.27.3 Preliminary Assessment Resources

Table 4.27-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.27-3
AOC SSS 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 1778	1945	LBNSY-PW	Shows layout of SSS. Fairly extensive coverage of LBNSY.
Industrial Waste Study	1969	Brown and Caldwell	Discusses operation, construction, layout, contributors, and wastes types that went into the sewer during 1969. Includes chemical analyses of raw sewage from LBNSY.
Drawing Microfiche No. 14367	1971	LBNSY-PW	Shows layout of SSS updated through 1971 including the sewer pits.
Drawing No. 3081	1976, 1987 Update	LBNSY-PW	Shows configuration of sanitary sewers through 1987.
Sewer Connection Project No. P-193	1983	Born, Barrett, & Associates	General inflow and outflow of sanitary sewer pits.
Video Inspection	1994	Empire Pipe Cleaning and Repair	Inspected pipes with video camera after cleaning. Sewer Pit B was not inspected.
Personnel Interview	1998	Johnson and Nunn, LBNSY	Discussed SSS in detail, including age, layout, cleaning activity, flow directions, gravity versus force lines, sanitary sewage, hazardous and toxic waste disposal, and IWTP.
Personnel Interview	1998	Neil LaFlour, LBNSY	Basic operations of sewer pits.

AOC = Area of Concern
IWTP = Industrial Wastewater Treatment Plant
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
No. = Number
SSS = Sanitary Sewer System

4.27.4 PA Recommendations

No further action is recommended for AOC SSS 3 based upon the following findings:

- No spills, leaks, or problems were reported;
- The structure is made of concrete;
- No cracks or holes were observed; and
- The sewer pit was cleaned out annually.

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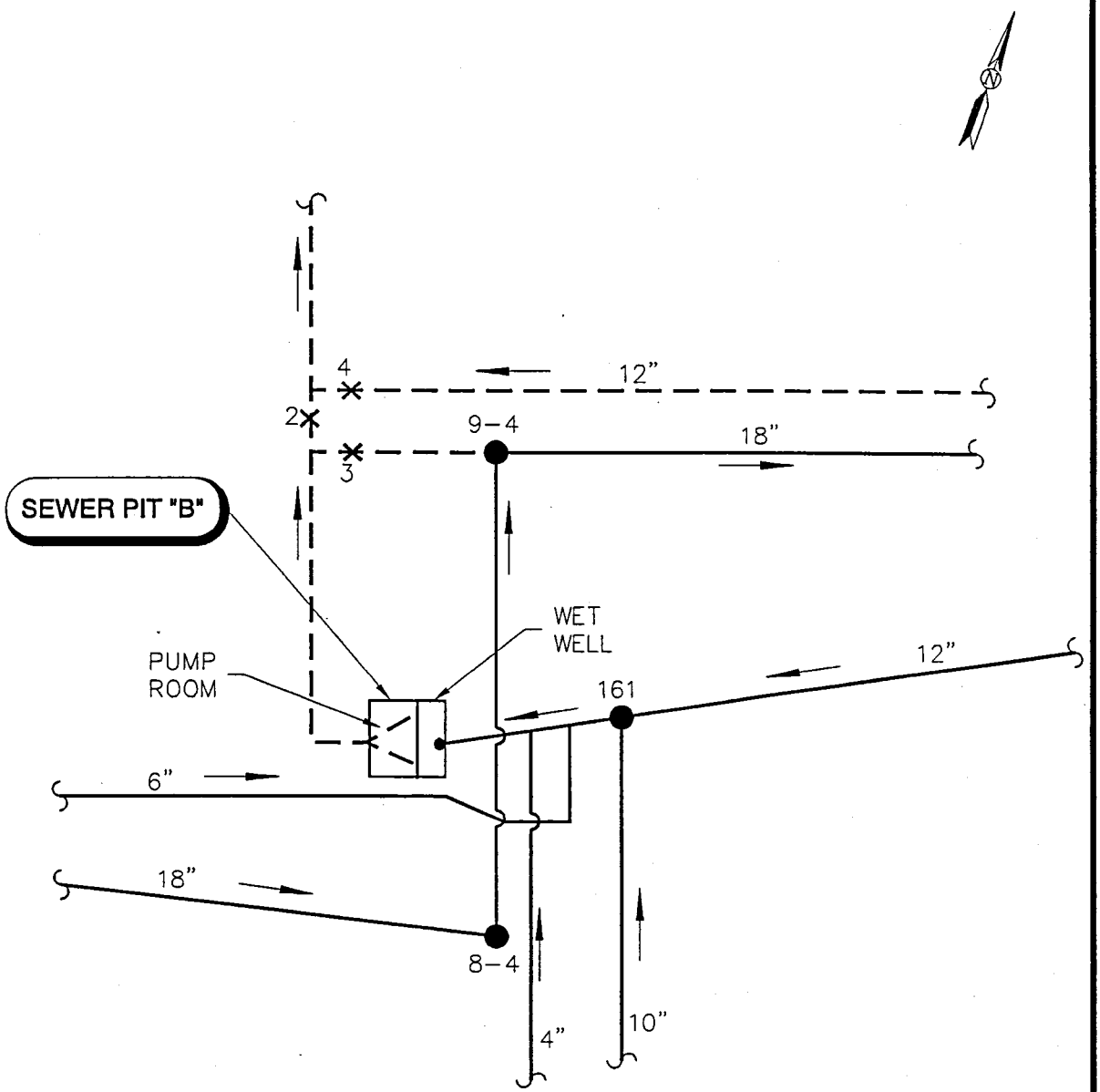

LEGEND

×	= BY-PASS VALVE
●	= MANHOLE AND NUMBER
——	= GRAVITY SANITARY SEWER LINE
– – –	= FORCE MAIN SANITARY SEWER LINE
◄——	= FLOW DIRECTION IN PIPE
6"	= PIPE DIAMETER
AOC	= AREA OF CONCERN
SSS	= SANITARY SEWER SYSTEM

SOURCE: PUBLIC WORKS DRAWING NUMBER 3081 (1976)

NOTE: SEE FIGURE 4.26-1 FOR MAP OF ENTIRE SANITARY SEWER SYSTEM.

NOT TO SCALE

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SSS 3 SEWER PIT "B"	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.27-1		4.27-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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Figure 4.27-2 Sanitary Sewer Pit B (AOC SSS 3), Facing East 3/19/98

4.28 SEWER PIT G (AOC SSS 4)

General information about all of the sewer pits at LBNSY is discussed in Section 4.26. A description of Sewer Pit G (AOC SSS 4), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.28.1 to 4.28.4.

4.28.1 Site Description

Table 4.28-1 summarizes the location and characteristics of AOC SSS 4. A site map is provided as Figure 4.28-1 and a site photograph is shown in Figure 4.28-2.

Table 4.28-1
AOC SSS 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
SSS 4	North of Building 127	C-33	Sanitary sewer pit used for lifting and pumping sewage from LBNSY to the Terminal Island Wastewater Treatment Plant.	One manhole leading to a dry well for servicing the pit. One wet well with no above ground access.	Dry well is approximately 10 to 15 feet deep including a pump service area of unknown dimensions. Wet well capacity is approximately 1,000 gallons of sewage. The bottom of the well is approximately 10 to 15 feet bgs.

AOC = Area of Concern
bgs = Below Ground Surface
LBNSY = Long Beach Naval Shipyard
No. = Number
SSS = Sanitary Sewer System

A site reconnaissance was performed on 19 March 1998 with the guidance of LBNSY employee Mr. Neil LaFlour (SSS maintenance supervisor). An inspection was conducted by removing the pit cover and observing the dry well. The dry well consisted of an underground concrete room containing a pump used to discharge sewage into the force main lines. The dry well allowed access for servicing the pump. The wet well consisted of an underground concrete containment structure 10 to 15 feet in depth used to temporarily contain sewage. The thickness of the concrete walls is unknown. The site reconnaissance was limited to a visual inspection performed at the ground level due to confined space entry restrictions. No cracks were observed at the dry well; the wet well was unable to be observed due to lack of access. The bottoms of both the dry well and the wet well (approximately 10 to 15 feet bgs) most likely extend into the shallow groundwater (approximately 12 feet bgs). The direction of shallow groundwater flow in the area of Sewer Pit G is suspected to be generally northeastward.

4.28.2 Operational History and Waste Characteristics

Table 4.28-2 summarizes the operational history and waste characteristics.

Table 4.28-2
AOC SSS 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
SSS 4	1943 to present (1999)	Sanitary sewer pit used for lifting and pumping sewage to the Terminal Island Waste Treatment Plant. Operates using gravity inflow, level meters, and force main outflow.	Sanitary sewage, as well as various hazardous and toxic wastes disposed in sinks, sumps, drains, and manholes.	Unknown.

AOC = Area of Concern No. = Number SSS = Sanitary Sewer System

Sewage inflow, both domestic and industrial, comes from the gravity sewer lines from Buildings 128, 129, 130, 131, 132, 133, 202, 210, 300, 303, and Pier E. The sewage is collected in the wet well and pumped into the force main system. Sewage output is regulated using a floating level meter that automatically initiates the pump (Born, et. al. 1983). The majority of sewage inflow to Sewer Pit G came from Buildings 128, 129, 130, 131, 132, 133, 202, and 210 through manhole 246 located directly west of the sewer pit (Born, et. al. 1983). According to one study, the average daily flow into Manhole 246 varied from 0.06 million gallons per day (mgd) to 0.25 mgd. (Born, et. al. 1983).

Sanitary sewer pits were cleaned annually using a vacuum truck to remove sediments from the bottom of the wet wells. During cleanings, less than one cubic yard of sediment was usually removed per sewer pit (Johnson, pers. comm., 1998). No sediment or structural cracks were observed in the Sanitary Sewer Pit G dry well during the site reconnaissance. The wet well was not inspected due to lack of access. Sewer Pit G was not inspected as part of the Sanitary Sewer Inspection (Empire 1994). The pit was last cleaned out in late 1996 (Johnson, pers. comm., 1998). No spills, leaks, or problems were reported for Sanitary Sewer Pit G.

4.28.3 Preliminary Assessment Resources

Table 4.28-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.28-3
AOC SSS 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 1778	1945	LBNSY-PW	Shows layout of SSS. Fairly extensive coverage of LBNSY.
Industrial Waste Study	1969	Brown and Caldwell	Discusses operation, construction, layout, contributors, and wastes types that went into the sewer during 1969. Includes chemical analyses of raw sewage from LBNSY.
Drawing Microfiche No. 14367	1971	LBNSY-PW	Shows layout of SSS updated through 1971 including sewer pits.
Sewer Connection Project No. P-193	1983	Born, Barrett, & Associates	General inflow and outflow of sanitary sewer pits.
Drawing No. 3081	1976, 1987 Update	LBNSY-PW	Shows configuration of sanitary sewers through 1987.
Video Inspection	1994	Empire Pipe Cleaning and Repair	Inspected pipes with video camera after cleaning. Sewer Pit G was not inspected.
Personnel Interview	1998	Johnson and Nunn, LBNSY	Discussed SSS in detail, including age, layout, cleaning activity, flow directions, gravity versus force lines, sanitary sewage, hazardous and toxic wastes disposal, and IWTP.
Personnel Interview	1998	Neil LaFlour, LBNSY	Basic operations of sewer pits.

AOC = Area of Concern
IWTP = Industrial Wastewater Treatment Plant
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
No. = Number
SSS = Sanitary Sewer System

4.28.4 PA Recommendations

No further action is recommended for AOC SSS 4 based upon the following findings:

- No spills, leaks, or problems were reported;
- The structure is made of concrete;
- No cracks or holes were observed; and
- The sewer pit was cleaned out annually.

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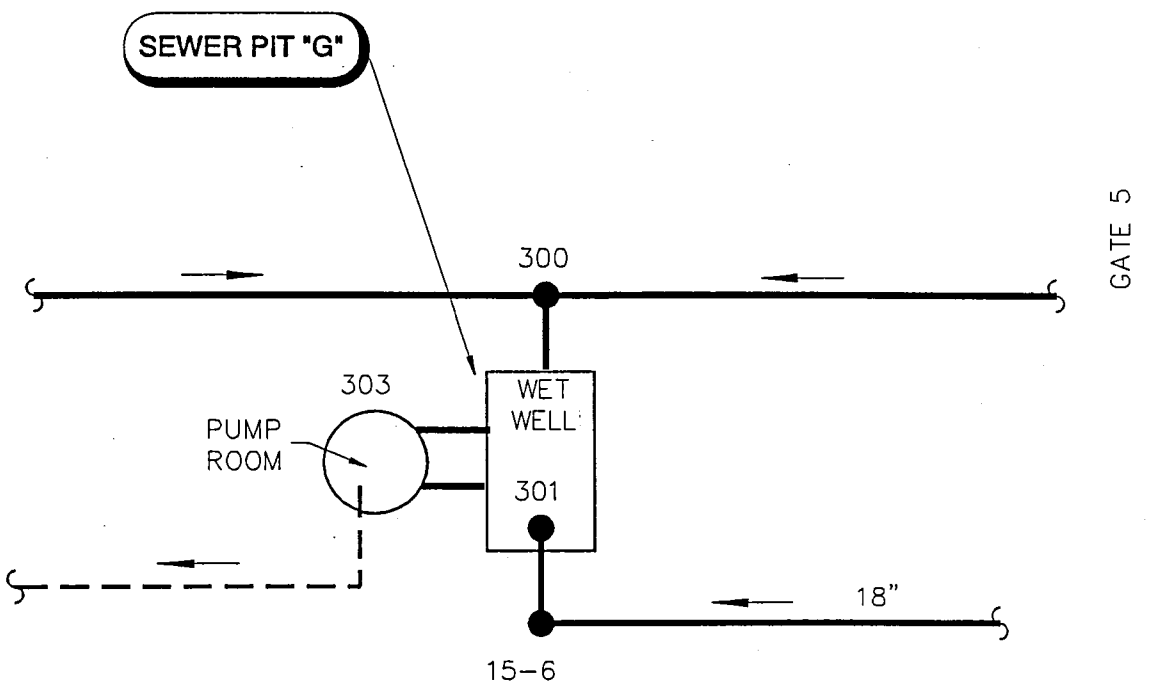

LEGEND

- ● = MANHOLE AND NUMBER
- —— = GRAVITY SANITARY SEWER LINE
- – – = FORCE MAIN SANITARY SEWER LINE
- ←—— = FLOW DIRECTION IN PIPE
- 6" = PIPE DIAMETER
- AOC = AREA OF CONCERN
- SSS = SANITARY SEWER SYSTEM

SOURCE: PUBLIC WORKS DRAWING NUMBER 3081 (1976)

NOTE: SEE FIGURE 4.26-1 FOR MAP OF ENTIRE SANITARY SEWER SYSTEM.

NOT TO SCALE

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC SSS 4 SEWER PIT "G"	FIGURE 4.28-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.28-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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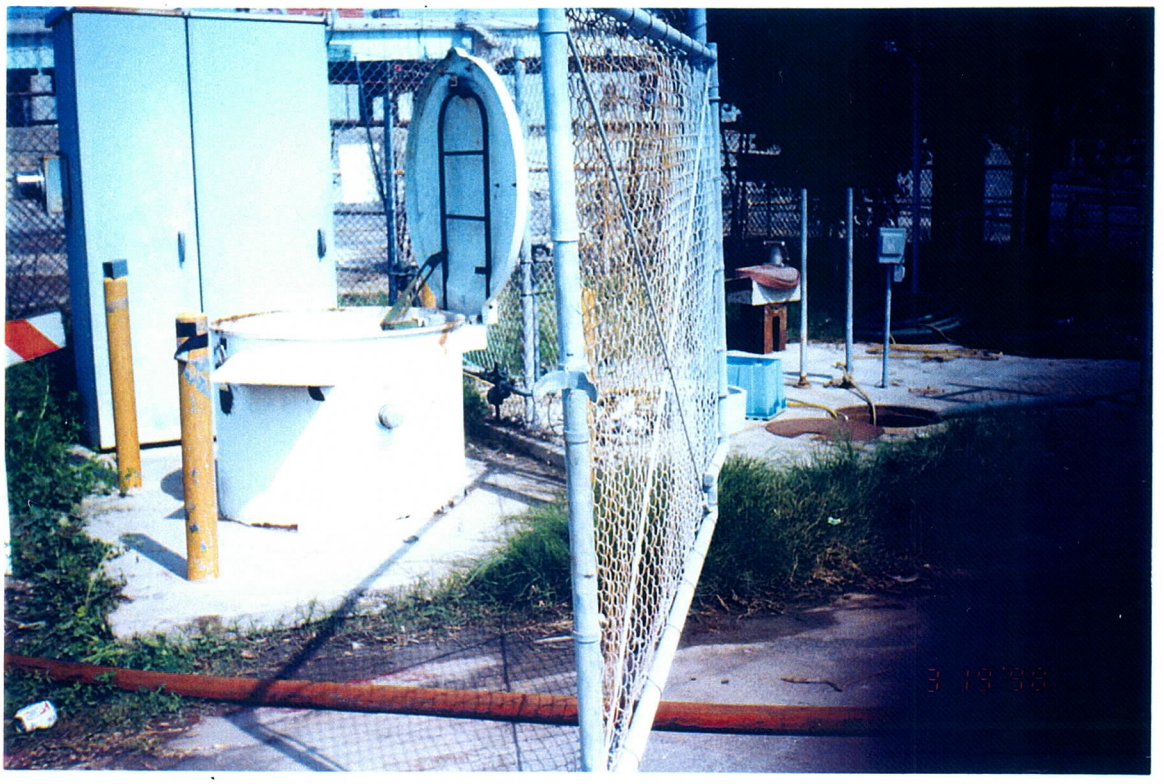

Figure 4.28-2 Sanitary Sewer Pit G (AOC SSS 4), Facing Northeast 3/19/98

4.29 SEWAGE HOLDING TANKS NEAR BUILDING 207 (AOC SSS 5)

A description of the Sewage Holding Tanks near Building 207 (AOC SSS 5), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.29.1 to 4.29.4.

4.29.1 Site Description

Table 4.29-1 summarizes the location and characteristics of AOC SSS 5. A site map is provided as Figure 4.29-1 and a site photograph is shown in Figure 4.29-2.

Table 4.29-1
AOC SSS 5 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
SSS 5	North of Building 207	F-30	Holding tanks used for regulating sewage discharge from LBNSY to the Terminal Island Wastewater Treatment Plant.	Two underground concrete containment structures and pumps for transfer to the Force Main Sanitary Sewer System.	Combined wet well capacity approximately 40,000 gallons of sewage. Both wet wells approximately 15 feet deep.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number
SSS = Sanitary Sewer System

A site reconnaissance was performed on 19 March 1998 with the guidance of LBNSY employee Mr. Neil LaFlour (SSS maintenance supervisor). Inspections of the concrete holding tanks were made by removing the manhole covers and observing the holding tanks. Building 207 holding tanks consist of two underground concrete containment structures with a total capacity of approximately 40,000 gallons. The holding tanks are significantly larger than any of the sewer pits because they serve as a central temporary storage location for LBNSY sewage. The tanks have sloped bottoms that cause sediments and other solids to congregate (self-scouring) in one area. The tanks were empty except for only a minor amount of running water at the bottom, and no sediments were observed during the 19 March 1998 site reconnaissance. No significant structural damage to the tanks was observed. The bottoms of both tanks (approximately 15 feet bgs) most likely extend into the shallow groundwater. The direction for groundwater flow in the area of the holding tanks is suspected to be generally toward the north or northwest. Building 207 contains level meters and several back-up pumps used for holding tank operations.

4.29.2 Operational History and Waste Characteristics

Table 4.29-2 summarizes the operational history and waste characteristics.

Table 4.29-2
AOC SSS 5 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
SSS 5	1943 to present (1999)	Holding tanks used for regulating the amount of sewage outflow to the nearby Terminal Island Wastewater Treatment Plant. Sources include sewage drained from pier operations, ships, drydocks, and general LBNSY activities. Operates using gravity inflow, level meters, and force main outflow.	Sanitary sewage, as well as various hazardous and toxic wastes disposed in sinks, sumps, drains, and manholes.	Unknown.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number
SSS = Sanitary Sewer System

Sewage inflow, both domestic and industrial, comes from the gravity sewer lines from Piers 1, 2, 3, 6, and 7, Drydock 1 and the Sewer Pit B lift station (Drydock 2, Drydock 3, and Buildings 103, 104, and 210). The holding tank also served as a temporary storage area for sewage discharges from ships. Discharge from ships consisted of large volumes of sewage centrally stored at the holding tanks and pumped to the treatment plant in accordance with maximum sewage outflow volumes per day from LBNSY. Sewage output was regulated using level meters that automatically initiated the pumps (Born, et. al. 1983). The sewage was collected in the tanks and pumped into the force main lines that discharged to the TIWTP. Sewage inflow and outflow rates were highly dependent upon ship sewage discharge activity at the drydocks and piers.

No sediment or structural cracks were observed in the two holding tanks during the site reconnaissance. The holding tanks were not inspected as part of the Sanitary Sewer Inspection (Empire 1994). The tanks were last cleaned out in late 1996 (Johnson, pers. comm., 1998). During operation, the tanks were cleaned annually using a vacuum truck to remove sediments from the bottom of the tanks. Cleaning was facilitated by the self-scouring design of the holding tanks. During cleanings, usually less than one cubic yard of sediment was removed per tank. No spills, leaks, or problems were reported.

4.29.3 Preliminary Assessment Resources

Table 4.29-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.29-3
AOC SSS 5 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 1778	1945	LBNSY-PW	Shows layout of SSS. Fairly extensive coverage of LBNSY.
Industrial Waste Study	1969	Brown and Caldwell	Discusses operation, construction, layout, contributors, and wastes types that went into the sewer during 1969. Includes chemical analyses of raw sewage from LBNSY.
Drawing Microfiche No. 14367	1971	LBNSY-PW	Shows layout of SSS updated through 1971 including the sewer holding tank.
Sewer Connection Project No. P-193	1983	Born, Barrett, & Associates	General inflow and outflow of sanitary sewer pits.
Drawing No. 3081	1976, 1987 Update	LBNSY-PW	Shows configuration of sanitary sewers through 1987.
Video Inspection	1994	Empire Pipe Cleaning and Repair	Inspected pipes with video camera after cleaning. The holding tanks were not inspected.
Personnel Interview	1998	Johnson and Nunn, LBNSY	Discussed SSS in detail, including age, layout, cleaning activity, flow directions, gravity versus force lines, sanitary sewage, hazardous and toxic wastes disposal, and IWTP.
Personnel Interview	1998	Neil LaFlour, LBNSY	Basic operations of sewer pits.

AOC = Area of Concern
IWTP = Industrial Wastewater Treatment Plant
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
No. = Number
SSS = Sanitary Sewer System

4.29.4 PA Recommendations

No further action is recommended for AOC SSS 5 based upon the following findings:

- No spills, leaks, or problems were reported;
- The structure is made of concrete;
- No cracks or holes were observed in the tanks; and
- The tanks were cleaned out annually.

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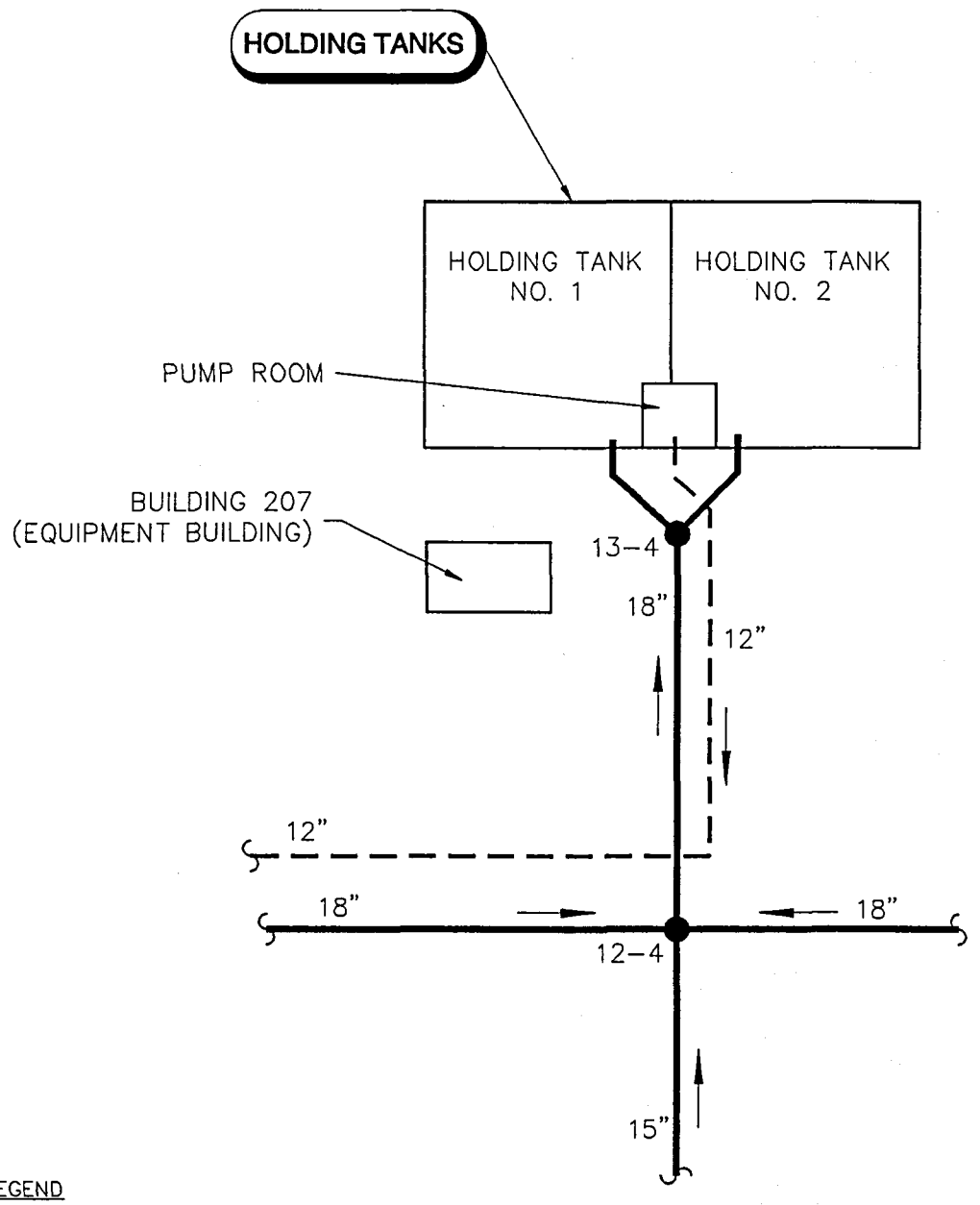

LEGEND

- ● = MANHOLE AND NUMBER
- ——— = GRAVITY SANITARY SEWER LINE
- – – – = FORCE MAIN SANITARY SEWER LINE
- ←——— = FLOW DIRECTION IN PIPE
- 6" = PIPE DIAMETER
- AOC = AREA OF CONCERN
- SSS = SANITARY SEWER SYSTEM

SOURCE: PUBLIC WORKS DRAWING NUMBER 3081 (1976)

NOTE: SEE FIGURE 4.26-1 FOR MAP OF ENTIRE SANITARY SEWER SYSTEM.

NOT TO SCALE

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC SSS 5 SEWAGE HOLDING TANKS NEAR BUILDING 207 GROUP B AREAS OF CONCERN	FIGURE 4.29-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.29-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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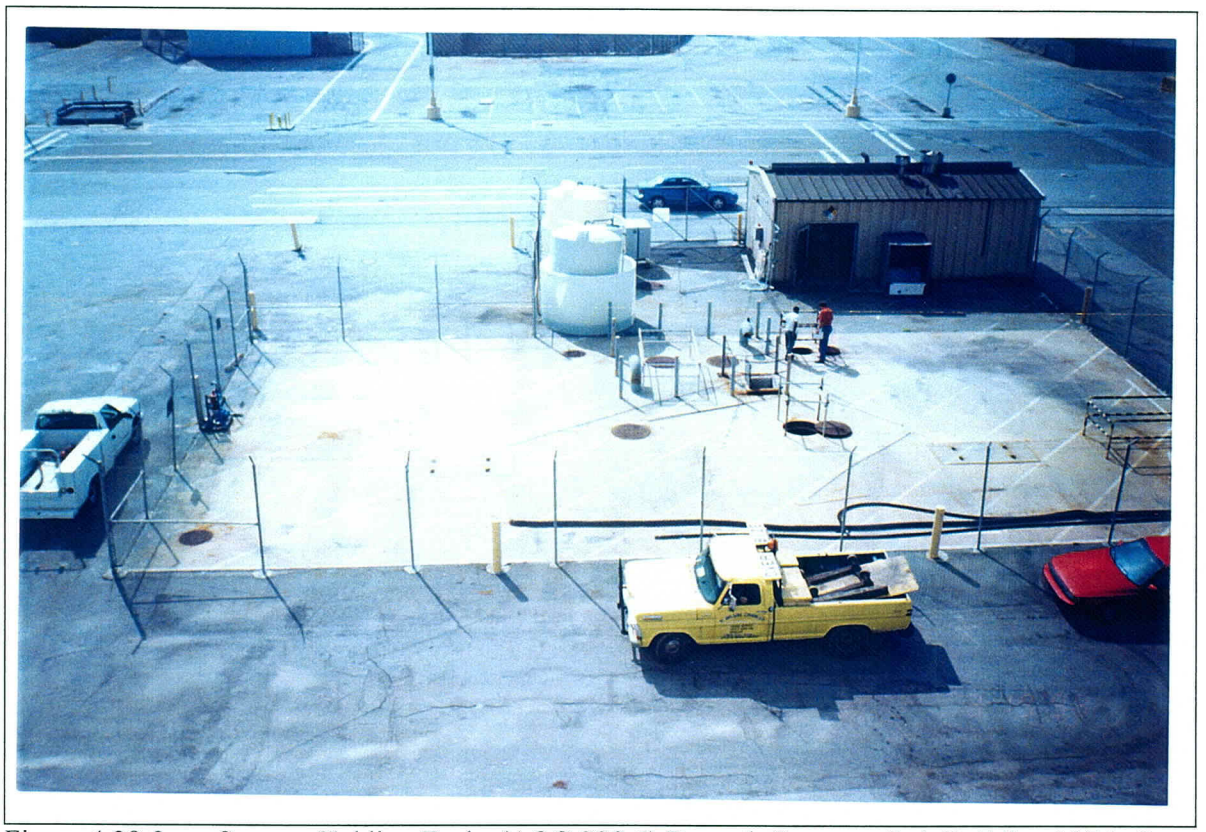


Figure 4.29-2 Sewage Holding Tanks (AOC SSS 5) Beneath Concrete Pad, Building 207 in Rear, Facing South 3/19/98

4.30 FORMER TREATMENT, STORAGE, AND DISPOSAL FACILITY, BUILDING 118 (AOC HWF 1)

A description of the former treatment, storage, and disposal facility (TSDF) at Building 118 (AOC Hazardous Waste Facility [HWF] 1), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.30.1 to 4.30.4.

4.30.1 Site Description

Table 4.30-1 summarizes the location and characteristics of AOC HWF 1. A site map is shown in Figure 4.30-1 and site photographs are shown in Figures 4.30-2 and 4.30-3.

Table 4.30-1
AOC HWF 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 1	Building 118	C-27	One-story building with metal siding and roof; multiple bays paved with concrete used for storage and transfer of hazardous wastes; surrounded by asphalt-paved yard. Whole facility is bermed and fenced.	Corrugated metal building with concrete floor.	Building 118: approximately 50 feet by 100 feet. Building 118 and associated yard: approximately 110 feet by 150 feet.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 1 is located east of Building 210 and includes a 50-by 100-foot corrugated metal storage building with a steel frame and ten bays to segregate incompatible wastes. During the March 1998 site reconnaissance, Building 118 was still standing but was empty and was not being used. The floor was constructed of 10-inch thick reinforced concrete with a concrete drainage channel around the outside of the building. The bays were surrounded by 6-inch high berms and were separated by corrugated metal walls. The bay for storing PCB wastes was coated with an epoxy sealant (SCS Engineers 1991). The center walkway through the facility was raised. The building was surrounded by an asphalt yard on the east, south, and west sides, and the yard was surrounded by a barbed-wire fence. To the north was an asphalt road (Avenue D).

4.30.2 Operational History and Waste Characteristics

Table 4.30-2 summarizes the operational history and waste characteristics of AOC HWF 1.

Table 4.30-2
AOC HWF 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 1	1980 to 1990	Hazardous waste storage and transfer.	Paints, solvents, resins, PCBs, petroleum products, coolants, coatings, metals, pesticides, containers, caustics, acids.	Approximately 130,000 pounds per month.

AOC = Area of Concern
HWF = Hazardous Waste Facility
No. = Number
PCBs = Polychlorinated Biphenyls

AOC HWF 1 was originally built as a temporary substitute structure until the other TSDF (Building 314) was built (SCS Engineers 1991). AOC HWF 1 served as the main hazardous waste storage facility at LBNSY for the ten years it was in operation (1980 to 1990). The majority of wastes generated from LBNSY operations were stored at this location. Table 4.30-3 lists shops that generated wastes and the type of wastes generated and temporarily stored at Building 118 (Lee and Ro Consulting Engineers 1984).

Table 4.30-3
Shops that Transported Hazardous Waste to AOC HWF 1

Bldg. No.	Shop No.	Shop Type/Name	Hazardous Wastes
43, 54, 73, 122	2	Transportation	Antifreeze, paint, paint thinner, battery acid
4, 51, 104, 149, 150	3	Utilities	Oil waste, empty hazardous material drums
None	6	Tool and services	Solvents
5, 7, 8	7	Maintenance	Paint, paint thinner, crushed fluorescent tubes, pesticide containers/rinsate
128	11	Pipe fitting	Alkaline cleaning sludge/residue
130	17	Sheet metal	Alkaline cleaning sludge/residue
132	31	Heavy tools	Solvents including trichloroethane, miscellaneous chemical waste
210	36	Weapons	Waste oil, solvents
129	38	Machinist	Waste oil, freon, trichloroethane
128	41	Boilermaker , blacksmith	Quenching oil, silica sand
129	51	Electrical	Varnish
131	56	Pipe fitting	Trichloroethane, freon
303	64	Plastic and carpentry	Acetone, plastic waste
210	66	Printed circuit boards	Waste oil
210	67	Communications and radar	Trichloroethane, mercury
216	71	Painting, abrasive blasting, equipment cleaning	Paint sludge, paint thinner

AOC = Area of Concern
Bldg. = Building
HWF = Hazardous Waste Facility
No. = Number

The surrounding yard was used for staging, consolidation, and temporary storage of hazardous waste in various types of containers such as drums, pails, cans, and bottles (SCS Engineers 1991).

LBNSY received a Part B operating permit (CA6170023109) under RCRA for this facility in 1983. AOC HWF 1 stored on average approximately 130,000 pounds of hazardous waste per month (SCS Engineers 1991).

In 1984, the facility was modified by constructing the 6-inch high concrete curbs between storage bays and an additional 4 to 6 inches of reinforced concrete on top of the already existing 6-inch thick concrete slab. The roof was also added at this time (SCS Engineers 1991).

The LBNSY Spill Log did not list any spills at Building 118 (Appendix B). However, numerous spills and leaks were documented at the site in a Phase I closure plan for the site (SCS Engineers 1991). These spills and leaks were presumably contained and cleaned according to Navy procedures.

In late 1990, LBNSY ceased use of Building 118 because the main TSDF (Building 314) was ready for use (SCS Engineers 1994). A closure plan was submitted in April 1992 to California Department of Toxic Substances Control (DTSC) for review, then modified and approved by DTSC in May 1993. In February 1994, implementation of the closure plan for Building 118 began. A subsurface investigation consisting of collection and analysis of soil samples from 0.5 and/or 5 feet bgs at 21 boring locations in and around Building 118 was performed in May 1994. The results indicated that copper, lead, trichloroethylene (TCE), and perchloroethylene (PCE) were detected in soil at elevated levels. A human health risk assessment, submitted by the Navy in December 1995 to DTSC for review, indicated acceptable risk for leaving soil in place. DTSC approved the risk assessment in January 1996, but required that groundwater be sampled or that a leachability study be performed to assess whether the soil contamination to be left in place might impact groundwater. The Draft Closure Certification report submitted by the Navy in 1996 will not be approved by DTSC until groundwater sampling, which started in June 1999, is completed. Groundwater was sampled in 1999 and a final closure certification report submitted in December 1999 is awaiting regulatory review.

PCBs were detected in concrete wipe samples collected in May 1994; decontamination activities occurred from March to May 1996.

4.30.3 Preliminary Assessment Resources

Table 4.30-4 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.30-4
AOC HWF 1 Preliminary Assessment Resources Summary

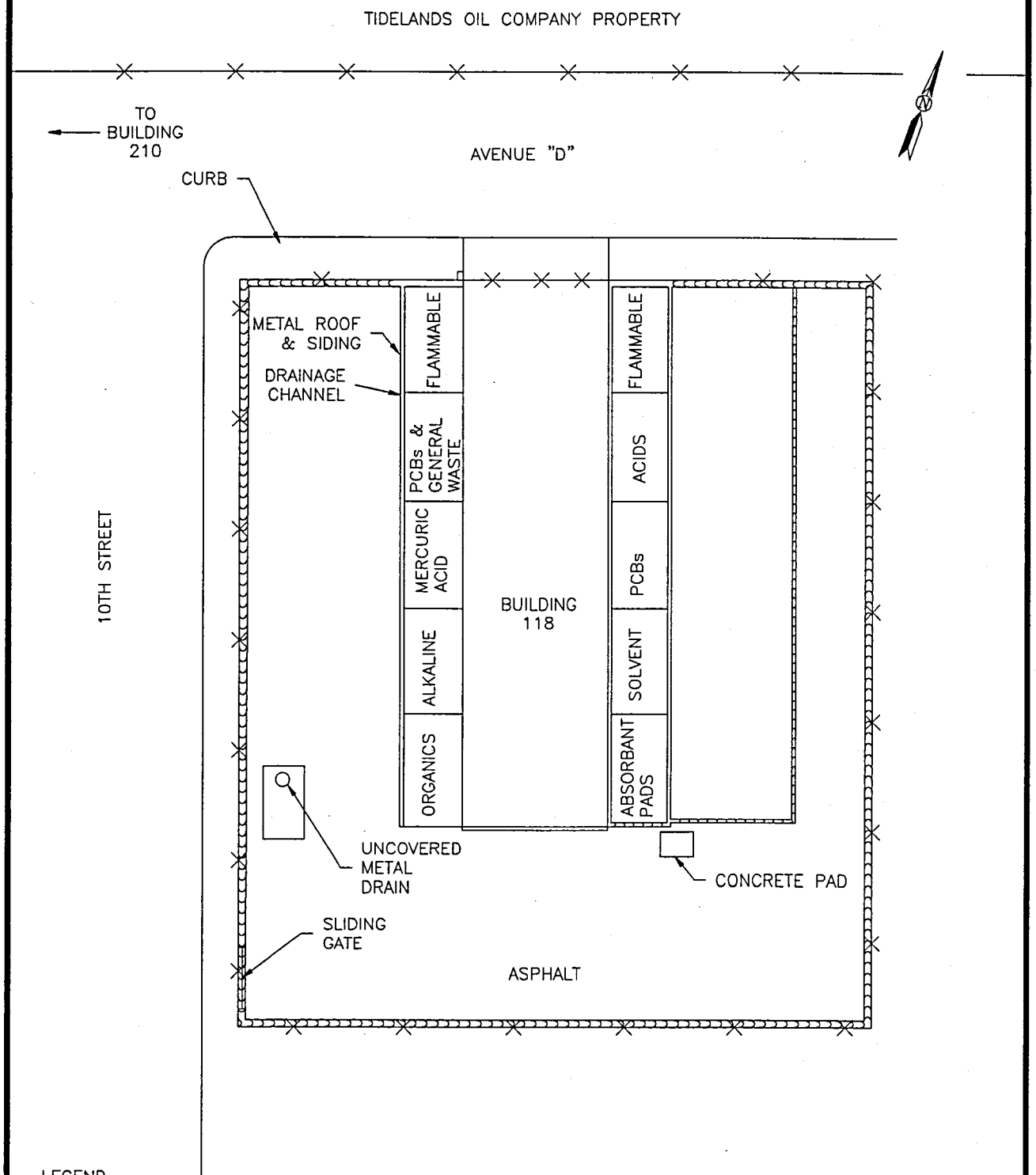
Resource	Date	Source	Summary
Drawing No. 3677	1973	LBNSY-PW	Building 118 not shown. Instead, large building labeled 102 existed in this area.
Hazardous Waste Shop Level Handling Areas	1984	Lee and Ro Consulting Engineers	Describes shops with associated hazardous wastes. Shows flow of wastes to disposal.
Phase I Closure Plan	1991	SCS Engineers	Background information.
Base map	1994	EFD-SWD	Shows Building 118. Labeled as "pending closure."
Phase II Closure Plan	1994	SCS Engineers	Background information.
Environmental Industrial Process Closure List	1997	LBNSY-PW	Closure date.
Personnel Interview	1998	DiDomenico, Sachse, BRASH	Closing through contract with BRASH Industries. LBNSY submitted request for closure to DTSC in 1997.
Letter to DTSC	1998	LBNSY	Requested clarification of closure status.
Personnel Interview	1999	Dienzo, Navy Region Southwest	Status of investigation under a separate project.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
EFD-SW = Engineering Field Division, Southwest
HWF = Hazardous Waste Facility
LBNSY-PW = Long Beach Naval Shipyard-Public Works
No. = Number

4.30.4 PA Recommendations

No further action is recommended for AOC HWF 1 under the AOCs Investigation because closure is being completed under a separate contract.

The facility has a RCRA closure plan and closure has already been initiated under another project contracted out by the Navy to a subcontractor. In June 1999, the Navy completed groundwater sampling as part of the closure process. The sampling report is currently in preparation with an expected issue in October 1999.



LEGEND

AOC = AREA OF CONCERN
HWF = HAZARDOUS WASTE FACILITY
PCBs = POLYCHLORINATED BIPHENYLS
—×—×— = CHAIN LINK FENCE
= BERM

SOURCE: SCS ENGINEERS 1991

20 10 0 20

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.30-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC HWF 1
FORMER TREATMENT, STORAGE, AND DISPOSAL FACILITY, BUILDING 118
GROUP B AREAS OF CONCERN

FIGURE
4.30-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.30-2 Outside Building 118 (AOC HWF 1) 2/12/98
Facing North

Figure 4.30-3 Inside Building 118 (AOC HWF 1) 2/12/98
Facing Southeast

4.31 TREATMENT, STORAGE, AND DISPOSAL FACILITY, BUILDING 314 (AOC HWF 2)

A description of the TSDF at Building 314 (AOC HWF 2), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.31.1 to 4.31.4.

4.31.1 Site Description

Table 4.31-1 summarizes the location and characteristics of AOC HWF 2. A site map is shown in Figure 4.31-1 and site photographs are shown in Figures 4.31-2 and 4.31-3.

Table 4.31-1
AOC HWF 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 2	Building 314.	H-40, I-40	One-story concrete-brick building with multiple bays used for storage and transfer of hazardous wastes; surrounded by asphalt-paved yard; whole facility is bermed and fenced.	Eight main storage bays within the building and two isolated storage areas on the eastern side of the building: one for PCB storage, and one for reactive materials storage.	Building: 9,350 square feet. Facility: 67,768 square feet.

AOC = Area of Concern
No. = Number
HWF = Hazardous Waste Facility
PCB = Polychlorinated Biphenyl

AOC HWF 2 is located east of Skipjack Road, north of Building 303, and south of Building 300. As part of the March 1998 site reconnaissance, AOC HWF 2 was inspected. Building 314 consisted of a concrete-brick storage building with eight main bays to segregate incompatible wastes, but it was no longer being used. The floor was 6 inches thick and made of concrete. The bays were each approximately 30 feet by 19 feet and were surrounded by 8-inch concrete berms. In addition, there was a room for PCB waste storage (19 feet by 22 feet) and a room for reactive waste storage (18 feet by 25 feet).

The facility had a concrete pad used for loading on the western side of the building. Below the pad was a sump to contain spills. The building was surrounded by an asphalt yard and the yard was surrounded by a barbed-wire fence. The facility appeared to be in good condition, with no evidence of staining from past operations.

4.31.2 Operational History and Waste Characteristics

Table 4.31-2 summarizes the operational history and waste characteristics of AOC HWF 2.

Table 4.31-2
AOC HWF 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 2	Constructed 1989; operated 1990 to 1996.	Hazardous waste storage and transfer.	Paints, solvents, resins, PCBs, oils, coolants, coatings, metals, pesticides, acids.	Unknown.

AOC = Area of Concern
HWF = Hazardous Waste Facility
No. = Number
PCBs = Polychlorinated Biphenyls

AOC HWF 2 was constructed in 1989 and began operating in 1990. It served as the main TSDF for LBNSY. A variety of wastes, including paints, solvents, resins, PCBs, oils, coolants, coatings, metals, pesticides, and acids were stored in 55-gallon drums at Building 314. It operated until LBNSY closed operationally in 1996.

LBNSY received a RCRA Part B permit (CA6170023109) for this facility in 1990. At that time, LBNSY closed the old facility (AOC HWF 1; see Section 4.30) and began storing hazardous waste at the Building 314 facility. AOC HWF 2 received hazardous waste from many shops (see Table 4.30-3 for a list of shops and associated wastes). In late 1996, LBNSY ceased use of the facility. The RCRA closure plan was accepted by DTSC in January 1996. LBNSY sent a notification of intent to close the facility to DTSC on 3 March 1997. On 11 June 1997, LBNSY received acceptance of the closure plan from DTSC. In accordance with the closure plan, BRASH Industries conducted soil sampling at 1, 3, and 5 feet bgs as well as wipe and concrete chip sampling. The Draft RCRA Closure Certification Report for Building 314 was submitted to DTSC in November 1998 and the comments provided by DTSC requested that a human health risk assessment be performed. The Navy has performed a screening human health risk assessment using an industrial scenario to complete closure information.

On 18 March 1993, 50 gallons of waste oil were spilled at Building 314 (LBNSY-Environmental Division [ED]). All spills listed in the Spill Log (Appendix B) were contained and cleaned up according to Navy procedures. No other spills were listed for Building 314 in the LBNSY Spill Log (Appendix B).

4.31.3 Preliminary Assessment Resources

Table 4.31-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.31-3
AOC HWF 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
HW Facility Permit	1990	U.S. EPA Region IX	Initial requirement for operations and closure.
Base Map	1994	EFD-SW	Shows Building 314.
Revised Closure Plan	1996	Brown & Caldwell	Describes decontamination and sampling procedures.
Letter to DTSC	1997	LBNSY	Notice of intent to close and request to withdraw permit renewal.
Personnel Interview	1998	Williams, Brown & Caldwell	Obtained RCRA Part B permit for LBNSY in 1990. Built in 1987.
Personnel Interview	1998	DiDomenico, LBNSY & Sachse, BRASH	Closing through contract with BRASH Industries, which conducted sampling. Report to be submitted to DTSC.
Personnel Interview	1999	Dienzo, Navy Region Southwest	Status of investigation under a separate project.

AOC = Area of Concern
DTSC = (California) Department of Toxic Substances Control
EFD-SW = Engineering Field Division, Southwest
EPA = U.S. Environmental Protection Agency
HW = Hazardous Waste
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number
RCRA = Resource Conservation and Recovery Act

4.31.4 PA Recommendations

No further action is recommended for AOC HWF 2 under the AOCs Investigation because closure is being completed under a separate contract. Closure of the facility is anticipated in 2000.

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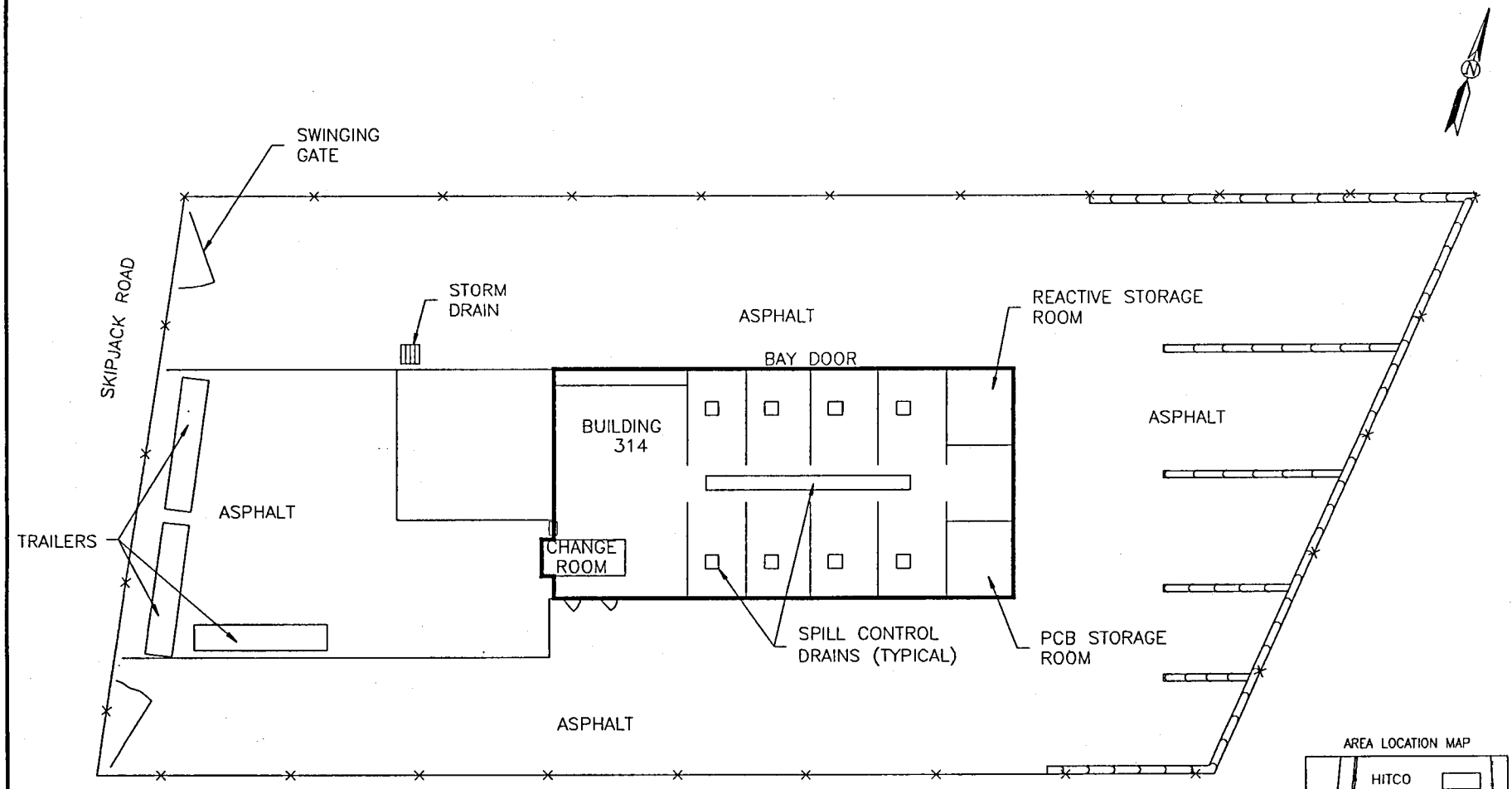

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99
FN: 4.31-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC HWF 2
TREATMENT, STORAGE, AND DISPOSAL FACILITY
BUILDING 314

GROUP B AREAS OF CONCERN

FIGURE
4.31-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.31-5

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Figure 4.31-2 Outside Building 314 (AOC HWF 2) Facing East 3/12/98

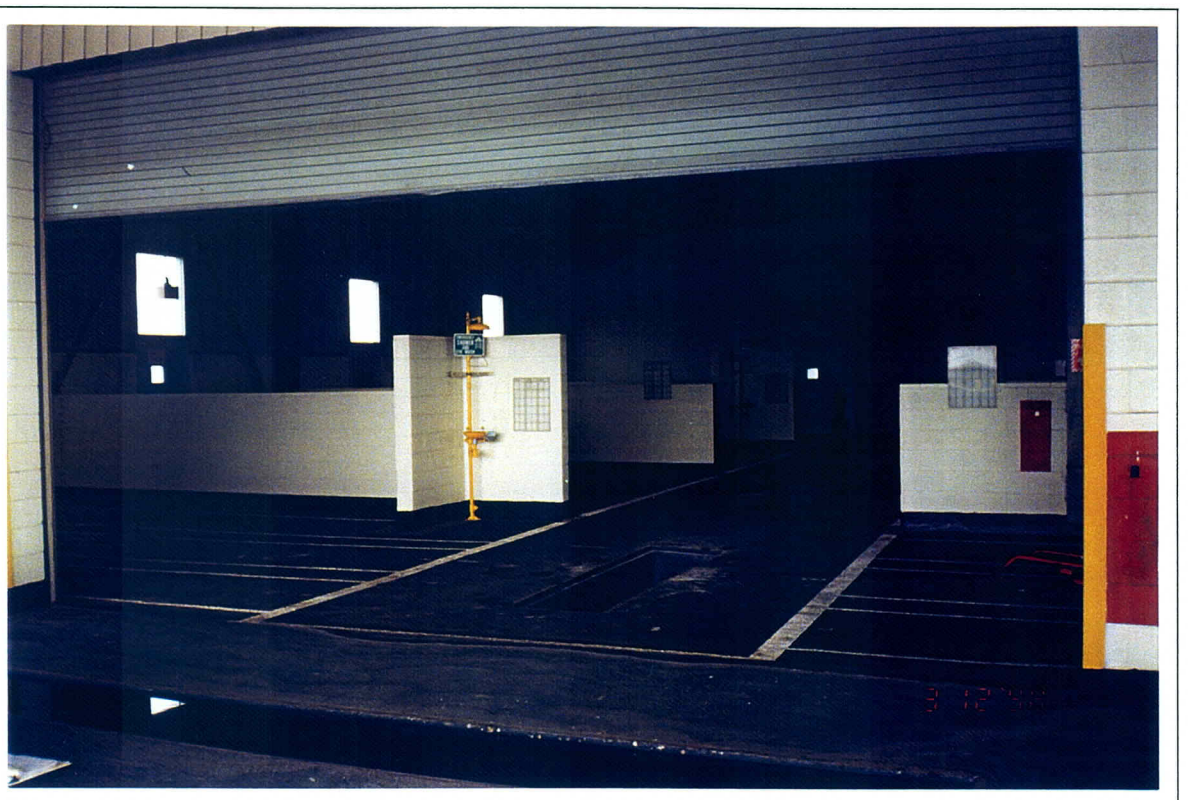

Figure 4.31-3 Inside Building 314 (AOC HWF 2) Facing Northeast 3/12/98

4.32 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 54 (AOC HWF 4)

A description of the Less Than 90-Day HWF at Building 54 (AOC HWF 4), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.32.1 to 4.32.4.

4.32.1 Site Description

Table 4.32-1 summarizes the location and characteristics of AOC HWF 4. A site map is provided as Figure 4.32-1 and a site photograph is shown in Figure 4.32-2.

Table 4.32-1
AOC HWF 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 4	Building 54	D-22	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal canopy over a bermed concrete pad with two cells. Surrounded by a secured chain-link fence.	38 feet by 19 feet by 12 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 4, located outside the southeast corner of Building 54, was housed under a corrugated metal canopy and surrounded by a locked chain-link fence. The bermed concrete surface was in good condition and showed only minor signs of staining (one rust stain from a metal drum) during the 12 March 1998 site reconnaissance. The weekly 90-day inspection forms from 1994 to 1995 identified no significant problems and stated that all hazardous materials were stored in containers on secondary containment pallets. The area was cleaned and closed according to Navy procedures (LBNSY 1996).

4.32.2 Operational History and Waste Characteristics

Table 4.32-2 summarizes the operational history and waste characteristics.

Table 4.32-2
AOC HWF 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 4	1980s to 1996	Storage of hazardous wastes generated from various LBNSY operations including wastes generated from ships.	Various operational wastes including aerosol paint, antifreeze, hydraulic fluid, lead-acid batteries, oil, oil filters, paint, sludge with heavy metals (from Building 108), and spill pads with oil.	Waste storage quantities ranged from 5 to 500 pounds per material. Waste sludge with heavy metals from Building 108 was usually stored in quantities greater than 300 pounds.

AOC = Area of Concern
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

The exact operational starting date of AOC HWF 4 is unknown, but is assumed to be in the 1980s because that is when all of the other HWFs began operations. AOC HWF 4 stored various wastes as listed in Table 4.32-2 until 1996, when LBNSY closed operationally.

According to a 1989 RCRA Facility Assessment performed by DTSC, no spills or releases were reported from this facility, and no evidence of leakage was found. At the time of the DTSC inspection, the HWF was paved with asphalt (DTSC 1989).

Weekly Inspection Checklists in the 1990s for Building 54 indicate the following were present at AOC HWF 4:

- Secondary containment berms for all stored liquids;
- Proper containment for all solid wastes; and
- Proper inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

Inventories generated in 1994 and 1995 indicate that appropriate information about the wastes was maintained. Each inventory sheet was signed by the point of contact responsible for this HWF.

4.32.3 Preliminary Assessment Resources

Table 4.32-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.32-3
AOC HWF 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
RCRA Facility Assessment	1989	DTSC	Operational history at AOC HWF 4.
Spill Log	1989 to 1996	LBNSY-ED	Indicates no spills were reported at Building 54.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 4.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
HWF = Hazardous Waste Facility
LBNSY-ED = Long Beach Naval Shipyard-Environmental Division
RCRA = Resource Conservation and Recovery Act

4.32.4 PA Recommendations

No further action is recommended for AOC HWF 4 based upon the following findings:

- Wastes were stored in containers on spill containment pallets in a bermed area;
- No problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No significant floor staining was observed.

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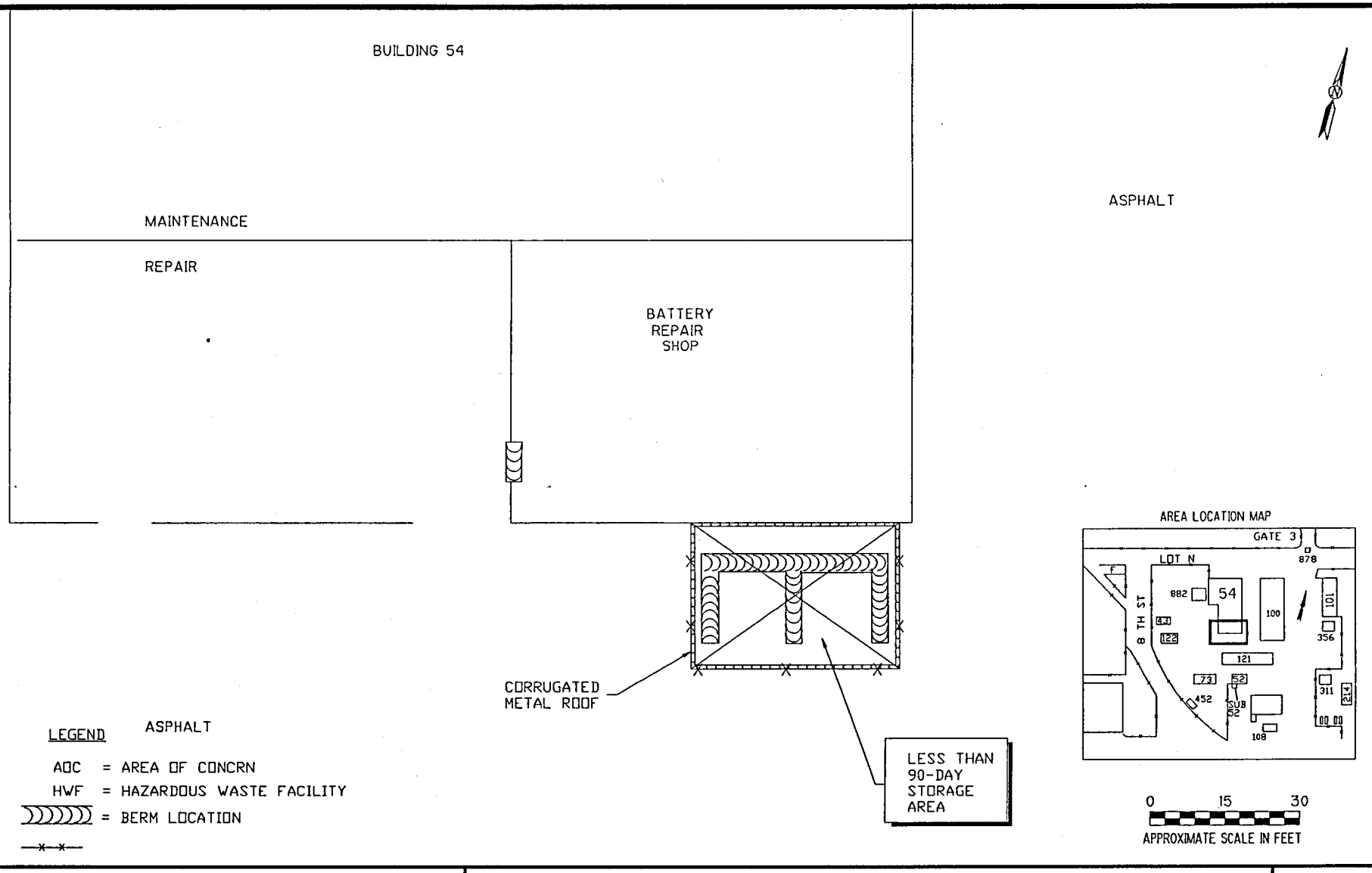

4.32-5

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HWF 4 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY BUILDING 54 GROUP B AREAS OF CONCERN	FIGURE 4.32-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.32-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.32-2 Building 54 Less Than 90-Day Hazardous Waste Facility (AOC HWF 4), Facing North 3/12/98

4.33 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 311 (AOC HWF 6)

A description of the Less Than 90-Day HWF at Building 311 (AOC HWF 6), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.33.1 to 4.33.4.

4.33.1 Site Description

Table 4.33-1 summarizes the location and characteristics of AOC HWF 6. A site map is provided as Figure 4.33-1. Site photographs are shown in Figures 4.33-2 and 4.33-3.

Table 4.33-1
AOC HWF 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 6	Building 311	E-24	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal structure with three cells and a bermed concrete surface.	48 feet by 36 feet by 10 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

During the 12 March 1998 site reconnaissance, the bermed concrete surface was in good condition and showed no signs of staining. AOC HWF 6, located west of Building 210 and east of 9th Street, was housed in a corrugated metal building and secured by a locked chain-link fence. The weekly 90-day inspection forms from 1994 to 1995 identified no significant problems, which indicated that all hazardous materials were stored in containers on secondary containment pallets. The area was cleaned and closed according to Navy procedures in 1996 (LBNSY 1996).

4.33.2 Operational History and Waste Characteristics

Table 4.33-2 summarizes the operational history and waste characteristics.

Table 4.33-2
AOC HWF 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 6	1980 to 1996	Storage of hazardous wastes generated from various LBNSY operations including wastes generated from ships.	Various wastes including adhesive, aerosol paint cans, aerosol solvent cans (1,1,1-trichloroethane), caustic sludge, chrome-stained mylar and lead tape, desiccant, developer, glass bead dust, grease, hardener, hydraulic oil, hydra/flush fluid, isopropyl alcohol, light ballasts, oil, oil & resin, oil & solvent, nickel cadmium battery packs, paint chips, Safe Step, solvent, 12-volt DC batteries.	Waste storage quantities ranged from 1 to 200 pounds per material. Waste oil, glass bead dust, desiccant, grease, caustic sludge, developer, and light ballasts were usually stored in quantities greater than 100 pounds.

AOC = Area of Concern
DC = direct current
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

AOC HWF 6 operated from 1980 to 1996 and stored various wastes as listed in Table 4.33-2.

Weekly Inspection Checklists in the 1990s for Building 311 indicate the following were present at AOC HWF 6:

- Secondary containment berms for all stored liquids;
- Proper containment for all solid wastes; and
- Properly maintained inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

The point of contact responsible for this HWF signed each inventory sheet.

4.33.3 Preliminary Assessment Resources

Table 4.33-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.33-3
AOC HWF 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 311.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 6.
Public Works Property Records	1996	LBNSY-ED	Date of construction and building specifications.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern HWF = Hazardous Waste Facility LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.33.4 PA Recommendations

No further action is recommended for AOC HWF 6 based upon the following findings:

- Wastes were stored in containers on spill containment pallets in a bermed area;
- No problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No floor staining was observed.

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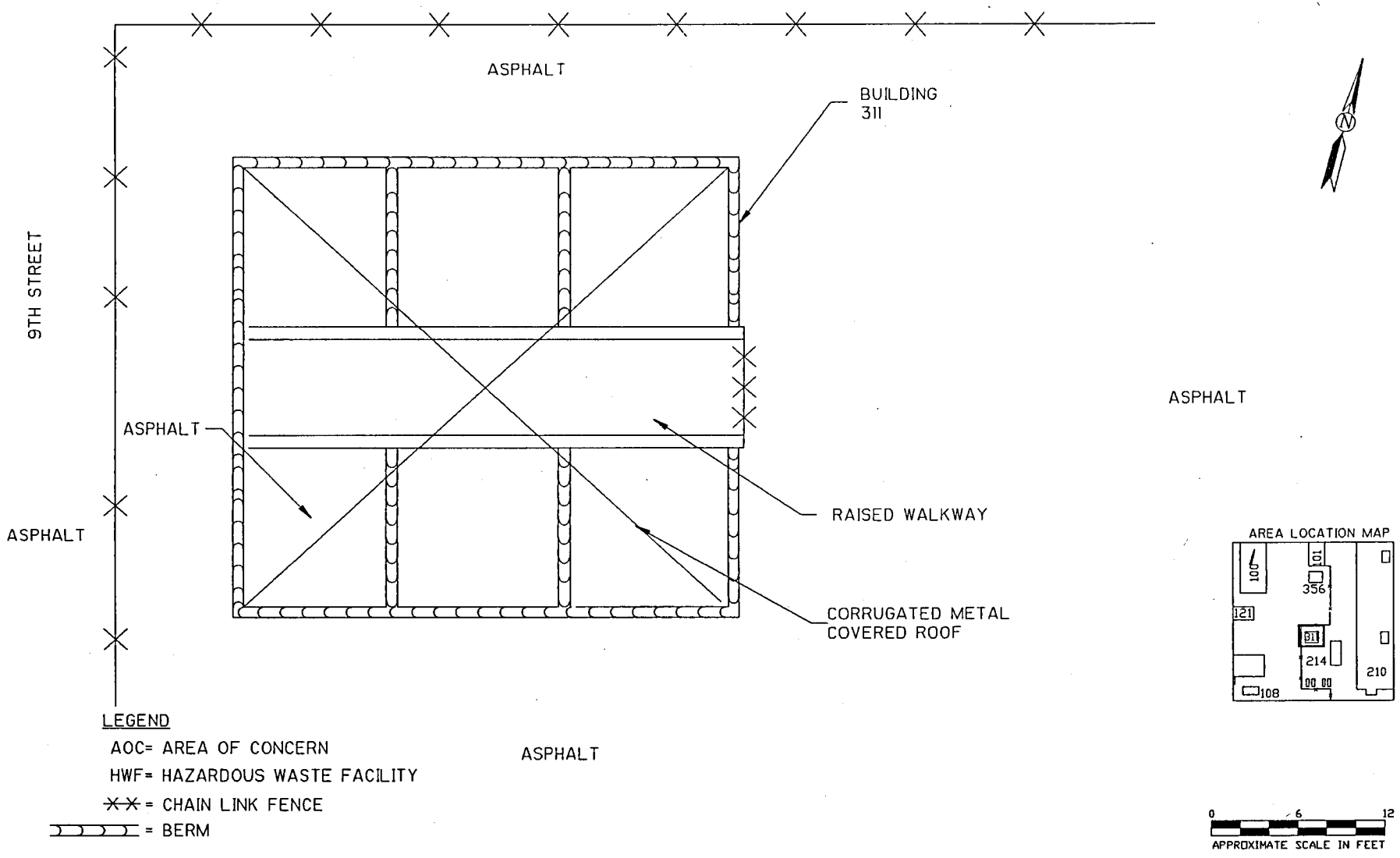

4.33-5

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HWF 6 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY BUILDING 311 GROUP B AREAS OF CONCERN	FIGURE 4.33-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.33-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.33-2 Outside Building 311 Less Than 90-Day Hazardous Waste Facility (AOC HWF 6), Facing Northwest 3/12/98

Figure 4.33-3 Inside Building 311 Less Than 90-Day Hazardous Waste Facility (AOC HWF 6), Facing Northwest 3/12/98

4.34 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 452 (AOC HWF 7)

A description of the Less Than 90-Day HWF at Building 452 (AOC HWF 7), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.34.1 to 4.34.4.

4.34.1 Site Description

Table 4.34-1 summarizes the location and characteristics of AOC HWF 7. A site map is provided as Figure 4.34-1. Site photographs are shown in Figures 4.34-2 and 4.34-3.

Table 4.34-1
AOC HWF 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 7	Building 452	F-21	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal canopy over a bermed concrete pad with three cells. Surrounded by a locked chain-link fence.	38 feet by 19 feet by 12 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 7, located south of Building 54 and north of Sullivan Street, contained three bays that were housed under a corrugated metal canopy and surrounded by a locked chain-link fence. The bermed concrete surface was in good condition and showed only minor signs of staining (three rust stains from metal drums) during the 18 March 1998 site reconnaissance. The weekly 90-day inspection forms from 1994 to 1995 identified no significant problems, and indicated that all hazardous materials were stored in containers on secondary containment pallets. The area was cleaned and closed according to Navy procedures (LBNSY 1996).

4.34.2 Operational History and Waste Characteristics

Table 4.34-2 summarizes the operational history and waste characteristics.

Table 4.34-2
AOC HWF 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 7	1993 to 1996	Storage of hazardous wastes generated from various LBNSY operations including wastes generated from ships.	Various wastes including waste oil, aerosol paint, hydraulic fluid, antifreeze, oil filters, spill pads with oil, sludge with heavy metals, and lead-acid vehicle batteries.	Waste storage quantities ranged from 1 to 400 pounds per material. Waste sludge with heavy metals from Building 108 was usually stored in quantities greater than 300 pounds.

AOC = Area of Concern
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

AOC HWF 7 operated from 1993 to 1996 and stored various wastes as listed in Table 4.34-2. The quantities of each waste type stored varied. According to inventory sheets, there were typically one to two pallets full of lead-acid vehicle batteries at most times.

Weekly Inspection Checklists for Building 452 indicate the following were present at AOC HWF 7:

- Secondary containment berms for all stored liquids;
- Proper containment for all solid wastes; and
- Properly maintained inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

The point of contact responsible for this HWF signed each inventory sheet.

4.34.3 Preliminary Assessment Resources

Table 4.34-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.34-3
AOC HWF 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 452.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 7.
Public Works Property Records	1996	LBNSY-ED	Date of construction and building specifications.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern HWF = Hazardous Waste Facility LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.34.4 PA Recommendations

No further action is recommended for AOC HWF 7 based upon the following findings:

- The building stored wastes for only three years;
- Wastes were stored in containers on spill containment pallets in a bermed area;
- No problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No significant floor staining was observed.

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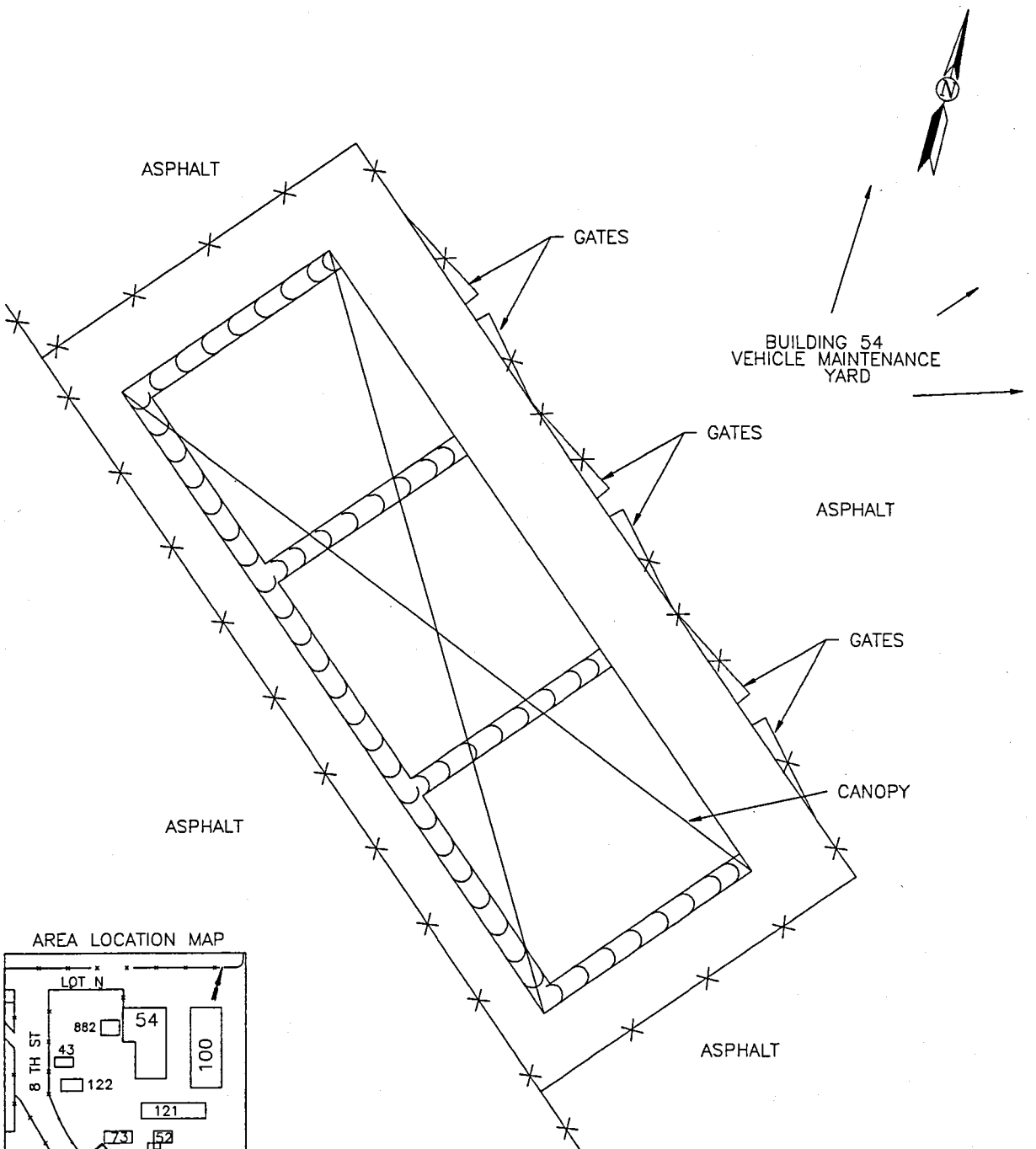

LEGEND

AOC = AREA OF CONCERN

HWF = HAZARDOUS WASTE FACILITY

-x-x-x- = CHAIN LINK FENCE

= BERM

0 5 10

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HWF 7 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY BUILDING 452 GROUP B AREAS OF CONCERN	FIGURE 4.34-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.34-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.34-2 Outside Building 452 Less Than 90-Day Hazardous Waste Facility (AOC HWF 7), Facing Southwest 3/18/98

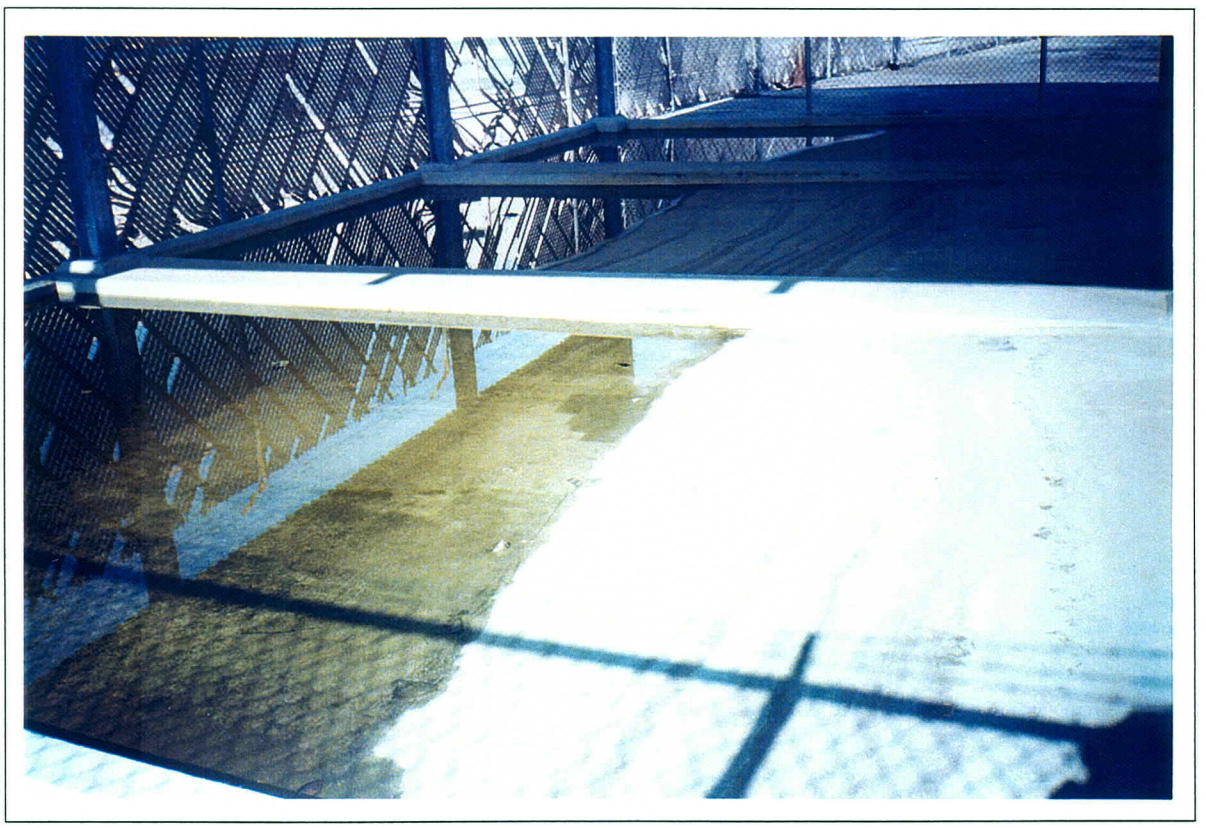

Figure 4.34-3 Inside Building 452 Less Than 90-Day Hazardous Waste Facility (AOC HWF 7), Facing Southwest 3/18/98

4.35 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 454 (AOC HWF 9)

A description of the Less Than 90-Day HWF at Building 454 (AOC HWF 9), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.35.1 to 4.35.4.

4.35.1 Site Description

Table 4.35-1 summarizes the location and characteristics of AOC HWF 9. A site map is provided as Figure 4.35-1. A site photograph is shown in Figure 4.35-2.

Table 4.35-1
AOC HWF 9 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 9	Building 454	C-30	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal canopy over a bermed concrete pad with five cells surrounded by a secured chain-link fence.	18 feet by 50 feet by 11 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 9, located north of Building 129, was housed under a corrugated metal canopy and surrounded by a locked chain-link fence. The bermed concrete surface was in good condition and showed no signs of staining during the 12 March 1998 site reconnaissance. The weekly 90-day inspection forms from 1994 to 1995 identified no significant problems, and indicated that all hazardous materials were stored in containers on secondary containment pallets. One inspection performed in March 1994 noted cracks in several of the bay floors; however, no cracks were noted during the 12 March 1998 site reconnaissance. The area was cleaned and closed according to Navy procedures (LBNSY 1996).

4.35.2 Operational History and Waste Characteristics

Table 4.35-2 summarizes the operational history and waste characteristics.

Table 4.35-2
AOC HWF 9 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 9	1989 to 1996	Storage of hazardous wastes generated from various LBNSY operations.	Various operational wastes including absorbent pads, adhesive, aerosol cans, antifreeze, blasting grit, epoxy resin, fuel filters, grinding swarf, hydraulic oil, JP-5, paint, preservative grease, rags, rosin, and 1,1,1-trichloroethane.	Waste storage quantities ranged from 5 to 200 pounds per material. Building 454 was used mainly for the storage of waste oil, absorbent pads, rags, and grease. Building 454 inventories indicate receiving one shipment of 525 pounds of 1,1,1-trichloroethane.

AOC = Area of Concern
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

AOC HWF 9 operated from 1989 to 1996 and stored various wastes as listed in Table 4.35-2.

Weekly Inspection Checklists for Building 454 indicate the following were present at AOC HWF 9:

- Secondary containment berms for all stored liquids;
- Proper containment for all solid wastes; and
- Proper inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

The point of contact responsible for this HWF signed each inventory sheet.

4.35.3 Preliminary Assessment Resources

Table 4.35-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.35-3
AOC HWF 9 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 454.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 9.
Public Works Property Records	1996	LBNSY-ED	Date of construction and building specifications.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern HWF = Hazardous Waste Facility LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.35.4 PA Recommendations

No further action is recommended for AOC HWF 9 based upon the following findings:

- Wastes were stored in containers on spill containment pallets in a bermed area;
- No significant problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No floor staining was observed.

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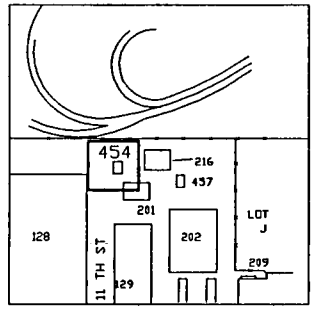
AREA LOCATION MAP



ASPHALT

ASPHALT

11 TH STREET

COVERED ROOF

GATES

BUILDING 454

ASPHALT

BUILDING 201

LEGEND

AOC = AREA OF CONCERN
HWF = HAZARDOUS WASTE FACILITY
—x—x— = CHAIN LINK FENCE
= BERM

0 10 20

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99

FN: 4.35-1

MODIFIED BY: J. Brown PROJECT NO. 6210-014

AOC HWF 9
LESS THAN 90-DAY HAZARDOUS WASTE FACILITY
Building 454

GROUP B AREAS OF CONCERN

FIGURE
4.35-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.35-5

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Figure 4.35-2 Inside Building 454 Less Than 90-Day Hazardous Waste Facility (AOC HWF 9), Facing Northeast 3/12/98

4.36 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 455 (AOC HWF 10)

A description of the Less Than 90-Day HWF at Building 455 (AOC HWF 10), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.36.1 to 4.36.4.

4.36.1 Site Description

Table 4.36-1 summarizes the location and characteristics of AOC HWF 10. A site map is provided as Figure 4.36-1. Site photographs are shown in Figures 4.36-2 and 4.36-3.

Table 4.36-1
AOC HWF 10 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 10	Building 455	J-31, J-32 K-31, K-32	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal canopy over a bermed concrete pad with five cells. Surrounded by a secured chain-link fence.	24 feet by 50 feet by 11 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 10, located south of Building 132, was housed under a corrugated metal canopy and surrounded by a locked chain-link fence. The bermed concrete surface was in good condition and showed only minor signs of staining (two rust stains from metal drums) during the 18 March 1998 site reconnaissance. The weekly 90-day inspection forms from 1994 to 1995 showed no significant problems and stated that all hazardous materials were stored in containers on secondary containment pallets. The area was cleaned and closed according to Navy procedures (LBNSY 1996).

4.36.2 Operational History and Waste Characteristics

Table 4.36-2 summarizes the operational history and waste characteristics.

Table 4.36-2
AOC HWF 10 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 10	1989 to 1996	Storage of hazardous wastes generated from various LBNSY operations including wastes generated from ships.	Various operational wastes including absorbent pads, adhesive, aerosol cans, ammonium oxide, antifreeze, batteries, bonding material, contaminated rubber hoses, epoxy, glass beads, grease, grinding swarf, hydraulic oil, JP-5, mercuric nitrate, oil, oil filters, oily rags, paint, paint sludge, primer, refrigerator cartridges, silicon seal, 1,1,1-trichloroethane, trisodium phosphate, and toluene.	Waste storage quantities ranged from 5 to 500 pounds per material.

AOC = Area of Concern
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

AOC HWF 10 operated from 1989 to 1996 and stored various wastes as listed in Table 4.36-2.

Weekly Inspection Checklists for Building 455 indicate the following were present at AOC HWF 10:

- Secondary containment berms for all stored liquids;
- Proper containment for all solid wastes; and
- Proper inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

The point of contact responsible for this HWF signed each inventory sheet.

4.36.3 Preliminary Assessment Resources

Table 4.36-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.36-3
AOC HWF 10 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 455.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 10.
Public Works Property Records	1996	LBNSY-ED	Date of construction and building specifications.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern HWF = Hazardous Waste Facility LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.36.4 PA Recommendations

No further action is recommended for AOC HWF 10 based upon the following findings:

- Wastes were stored in containers on spill containment pallets in a bermed area;
- No significant problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No significant floor staining was observed.

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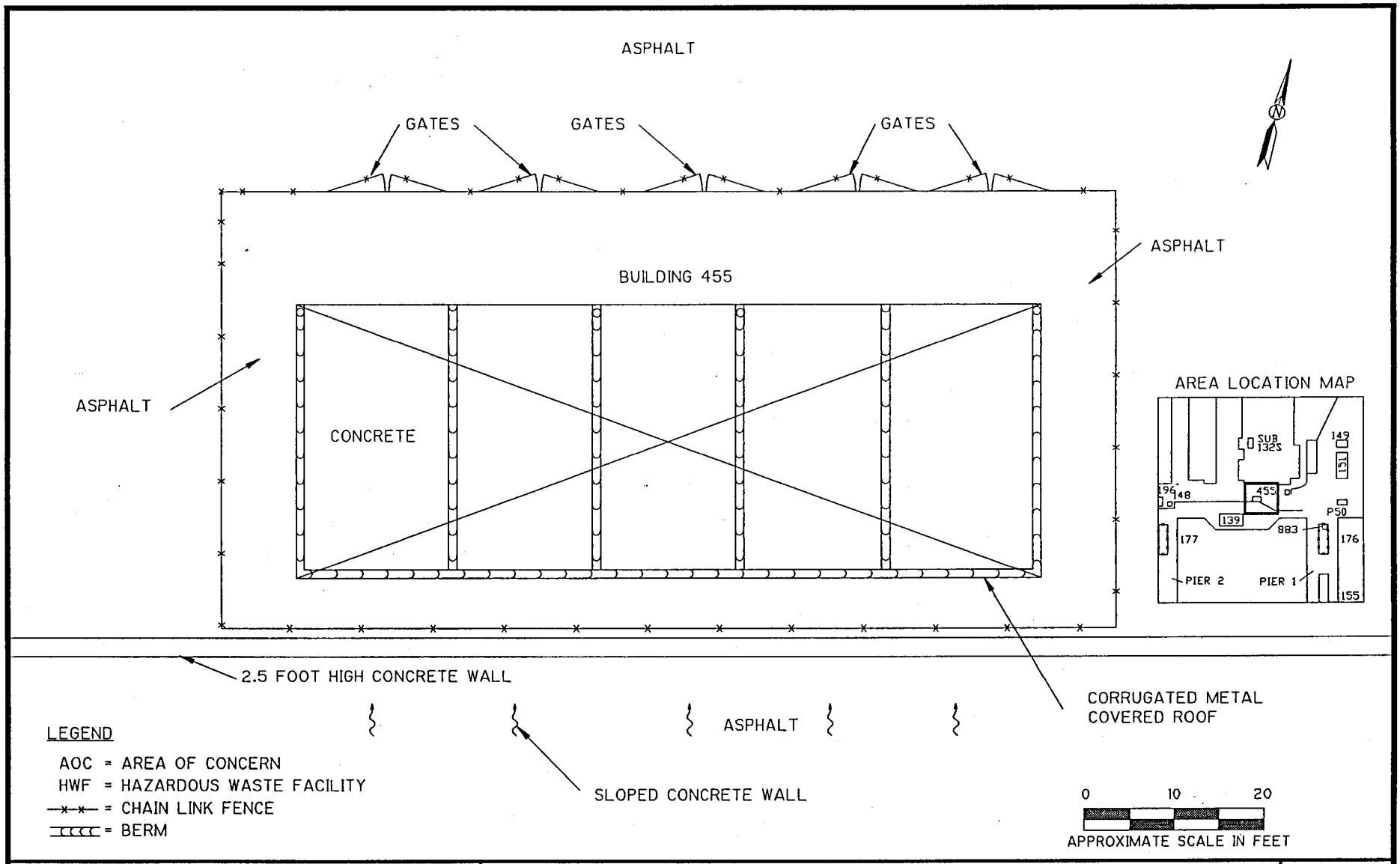

4.36-5

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HWF 10 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY Building 455 GROUP B AREAS OF CONCERN	FIGURE 4.36-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.36-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.36-2 Outside Building 455 Less Than 90-Day Hazardous Waste Facility (AOC HWF 10), Facing West 3/18/98

Figure 4.36-3 Inside Building 455 Less Than 90-Day Hazardous Waste Facility (AOC HWF 10), Facing West 3/18/98

4.37 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY, BUILDING 886 (AOC HWF 12)

A description of the Less Than 90-Day HWF at Building 886 (AOC HWF 12), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.37.1 to 4.37.4.

4.37.1 Site Description

Table 4.37-1 summarizes the location and characteristics of AOC HWF 12. A site map is provided as Figure 4.37-1. Site photographs are shown in Figures 4.37-2 and 4.37-3.

Table 4.37-1
AOC HWF 12 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 12	Building 886	R-42	Less than 90-day Hazardous Waste Storage Facility.	One corrugated metal canopy over an asphalt surface with 10 cells. Surrounded by a secured chain-link fence.	Approximate dimensions: 25 feet by 80 feet by 15 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 12, located at the southern end of Pier E, consisted of a gated area under a corrugated metal canopy. During the March 1998 site reconnaissance, a locked chain-link fence surrounded the Building 886 area. Vegetation was noted growing through cracks in the asphalt in numerous locations and there was one dried paint stain in the yard. According to weekly 90-day inspection forms from 1994 to 1995, the HWF was used to store only solid hazardous materials. The area was cleaned and closed according to Navy procedures (LBNSY 1996).

4.37.2 Operational History and Waste Characteristics

Table 4.37-2 summarizes the operational history and waste characteristics.

Table 4.37-2
AOC HWF 12 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 12	1980 to 1996	Storage of solid wastes generated from various LBNSY operations including wastes generated from ships.	Various solid wastes including aluminum oxide dust, steel shot with non-skid dust, steel shot dust, oily sludge, garnet dust, garnet dust black slag with paint chips, black slag dust, sludge and sand blast grit, sand blast grit, sand grit with sea growth, steel grit with paint chips, and rust non-skid with paint chips.	Waste storage quantities ranged from 500 to 10,000 pounds of solid waste. Most wastes were stored in approximately 4,000-pound quantities.

AOC = Area of Concern
HWF = Hazardous Waste Facility
LBNSY = Long Beach Naval Shipyard
No. = Number

AOC HWF 12 operated from 1980 to approximately 1996 and stored various wastes as listed in Table 4.37-2.

Weekly Inspection Checklists for Building 886 indicate the following were present at AOC HWF 12:

- Only solid wastes were stored;
- Proper containment was used for all solid wastes; and
- Proper inventory sheets.

Inventory sheets (LBNSY-ED 1994, 1995) include the following for each waste:

- Container identification number;
- Weight;
- Composition;
- Location of generation;
- Start date of accumulation and date full;
- Expiration date;
- Laboratory identification number for samples; and
- Date received by the HWF.

The point of contact responsible for this HWF signed each inventory sheet.

4.37.3 Preliminary Assessment Resources

Table 4.37-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.37-3
AOC HWF 12 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 886.
Weekly Less Than 90-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Inventory sheets	Approximately 1994 to 1995	LBNSY-ED	Inventories of hazardous wastes stored at AOC HWF 12.
Public Works Property Records	1996	LBNSY-ED	Date of construction and building specifications.
Closure Documentation	1996	LBNSY-ED	Cleaned and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern HWF = Hazardous Waste Facility LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.37.4 PA Recommendations

No further action is recommended for AOC HWF 12 based upon the following findings:

- Only solid wastes were stored;
- Proper containment was used;
- No problems were noted during weekly inspections by LBNSY-ED; and
- The HWF was cleaned and closed according to Navy Procedures.

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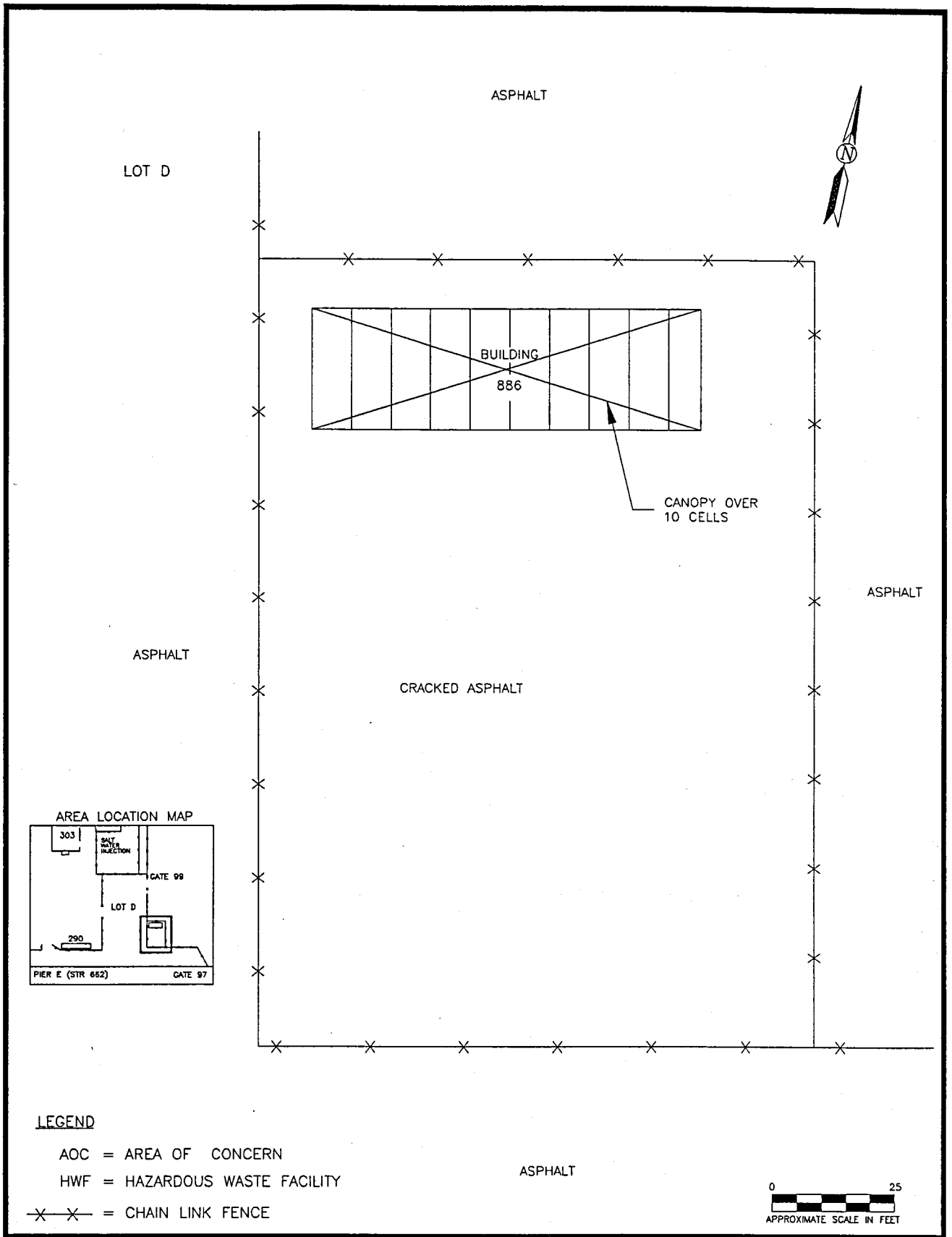

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HWF 12 LESS THAN 90-DAY HAZARDOUS WASTE FACILITY BUILDING 886 GROUP B AREAS OF CONCERN	FIGURE 4.37-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.37-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.37-2 Outside Building 886 Less Than 90-Day Hazardous Waste Facility (AOC HWF 12), Facing North 3/18/98

Figure 4.37-3 Inside Building 886 Less Than 90-Day Hazardous Waste Facility (AOC HWF 12), Facing West 3/18/98

4.38 LESS THAN 180-DAY HAZARDOUS WASTE FACILITY, BUILDING 54 (AOC HWF 13)

A description of the Less Than 180-Day HWF at Building 54 (AOC HWF 13), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.38.1 to 4.38.4.

4.38.1 Site Description

Table 4.38-1 summarizes the location and characteristics of AOC HWF 13. A site map is provided as Figure 4.38-1 and a site photograph is shown in Figure 4.38-2.

Table 4.38-1
AOC HWF 13 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HWF 13	Building 54	D-22	Less than 180-day Hazardous Waste Storage Facility.	One corrugated metal canopy over a bermed concrete pad with two cells. Surrounded by a secured chain-link fence.	38 feet by 19 feet by 12 feet high.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

AOC HWF 13, located at the southeast corner of Building 54, was inspected as part of the March 1998 site reconnaissance. The 180-day storage area was housed under a corrugated metal canopy and surrounded by a locked chain-link fence. This HWF area was used as both a 90-day storage area for various hazardous wastes (see Section 4.32 for AOC HWF 4), and as a 180-day storage area for lead acid vehicle batteries. The 180-day storage area was used in conjunction with the battery repair and storage shop located in the southwestern corner of Building 54. Batteries may have been stored in both the 180-day storage area and temporarily inside the battery shop. Both the 180-day storage area and the battery shop have bermed concrete floors that appeared to be in good condition and showed only minor signs of staining (one rust stain from a metal drum). Weekly 180-day inspection forms from 1994 to 1995 showed no significant problems, and stated that all batteries were stored on secondary containment pallets. The area was cleaned and closed according to Navy procedures (LBNSY-ED 1996).

4.38.2 Operational History and Waste Characteristics

Table 4.38-2 summarizes the operational history and waste characteristics.

Table 4.38-2
AOC HWF 13 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HWF 13	1980s to 1996	Storage of lead-acid batteries from Building 54 Battery Shop operations.	Lead-acid vehicle batteries.	Quantities ranged from one to two pallets full of batteries at any one time.

AOC = Area of Concern HWF = Hazardous Waste Facility No. = Number

Batteries were likely stored inside Building 54 since the 1940s, although the date that AOC HWF 13 began being used for battery storage is unknown; the other HWFs at LBNSY began operations in the 1980s. A battery shop, used for battery repair and storage, was located inside the southeastern corner of Building 54. The battery shop had an epoxy coated cement floor that was coated in the late 1970s (DTSC 1989).

According to a 1989 RCRA Facility Assessment performed by DTSC, battery acid was reportedly disposed of onto the ground outside the southeastern corner of Building 54 from approximately 1965 to 1979 (DTSC 1989). Soil and groundwater sampling was performed in this area as part of AOC MISC 8 (see Section 4.60). Prior to 1987, the area was paved with asphalt (DTSC 1989). In 1989, when the RCRA Facility Assessment was performed, no spills or releases had been reported within several years and no evidence of floor staining was observed (DTSC 1989).

Weekly Inspection Checklists in the 1990s for Building 54 indicate secondary containment was used for all stored batteries (LBNSY-ED 1994, 1995).

4.38.3 Preliminary Assessment Resources

Table 4.38-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.38-3
AOC HWF 13 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
RCRA Facility Assessment	1989	DTSC	Operational history at AOC HWF 13.
Spill Log	1992 to 1996	LBNSY-ED	Indicates no spills were reported at Building 54.
Weekly Less Than 180-Day Inspection Forms	1994 to 1995	LBNSY-ED	No problems noted during weekly inspections.
Closure Documentation	1996	LBNSY-ED	Cleaned up and closed according to Navy procedures.
Personnel Interview	1998	Johnson, LBNSY	Provided hazardous waste storage information.
Personnel Interview	1998	Nunn, LBNSY	Provided hazardous waste storage information.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
HWF = Hazardous Waste Facility
LBNSY-ED = Long Beach Naval Shipyard-Environmental Division
RCRA = Resource Conservation and Recovery Act

4.38.4 PA Recommendations

No further action is recommended for AOC HWF 13 based upon the following findings:

- Lead-acid batteries were stored on spill containment pallets in a bermed area;
- No problems were noted during weekly inspections by LBNSY-ED;
- The HWF was cleaned and closed according to Navy procedures; and
- No significant floor staining was observed.

One soil and one groundwater sample were collected near the southeastern corner of Building 54 as part of an investigation of the battery shop at the Transportation Yard, AOC MISC 8 (see Section 4.60 of this report).

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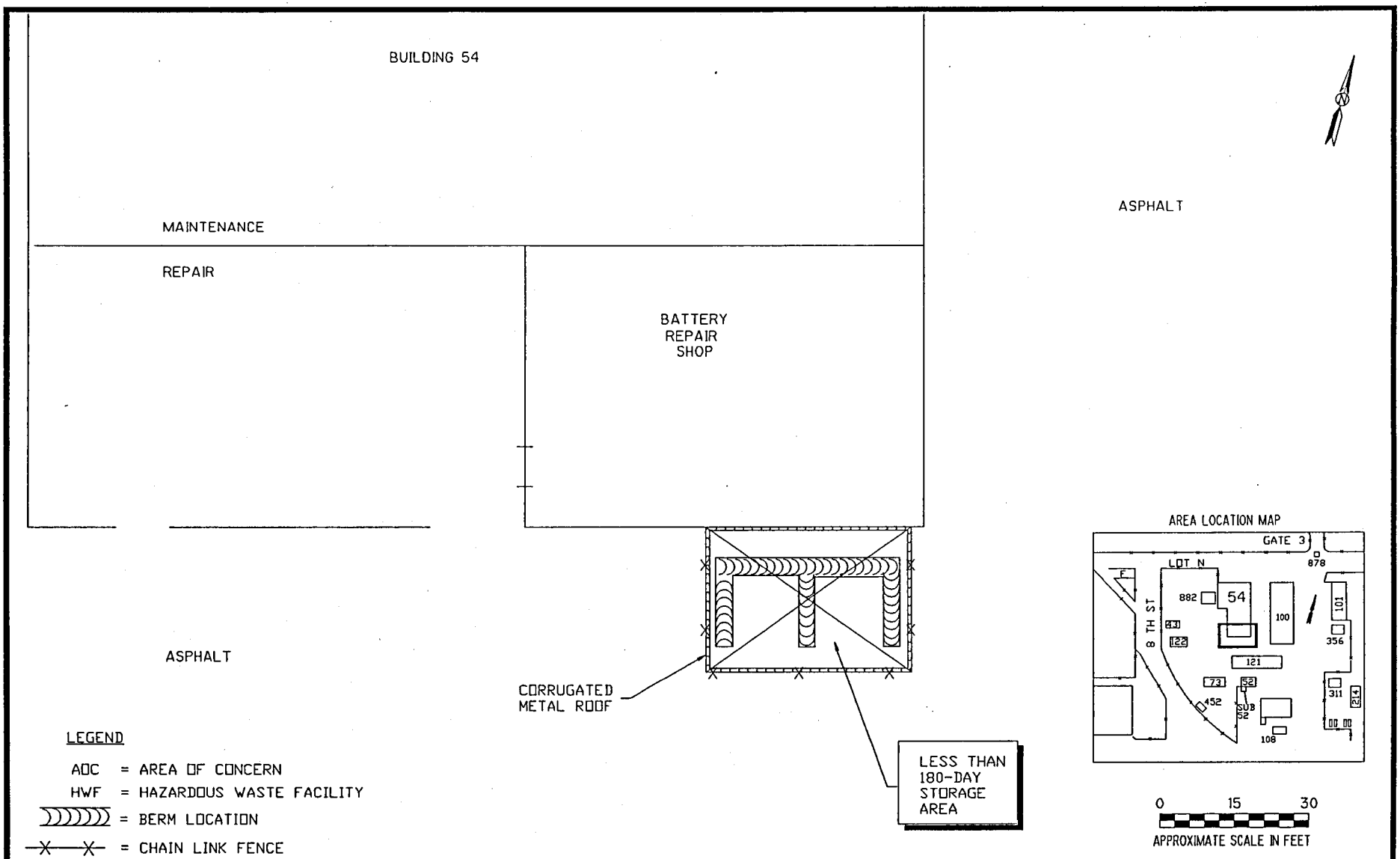

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HWF 13 LESS THAN 180-DAY HAZARDOUS WASTE FACILITY BUILDING 54 GROUP B AREAS OF CONCERN	FIGURE 4.38-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.38-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.38-5

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Figure 4.38-2 Building 54 Less Than 180-Day Hazardous Waste Facility (AOC HWF 13), Facing East 3/12/98

4.39 FORMER AND CURRENT OIL PRODUCTION AREAS (AOC HIST 1)

This section presents a description of the former and current oil production areas (AOC Historical [HIST] 1), their operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.39.1 Site Description

Table 4.39-1 summarizes the location and characteristics of AOC HIST 1. A site map is provided as Figure 4.39-1. Two current site photographs and a historical photograph are shown in Figures 4.39-2, 4.39-3 and 4.39-4, respectively.

Table 4.39-1
AOC HIST 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 1	Eastern side (Pier E) of LBNSY	A to S-37 to 44, and A to B-14 to 43.	Former and current oil production areas.	Oil wells, pipelines, and former storage tanks.	Pipelines are extensive throughout eastern side (Pier E) of LBNSY. Exact footage is unknown.

AOC = Area of Concern
HIST = Historical
LBNSY = Long Beach Naval Shipyard
No. = Number

The Wilmington Oil Fields consists of three associated oil production fields. One of the three fields exists on Navy property, on the eastern side of LBNSY at Pier E. The other two areas are located offsite but adjacent to LBNSY property on the northern border of LBNSY just south of Ocean Boulevard and on property located east of and adjacent to oil production on the LBNSY property.

The City of Long Beach owns the wells. Long Beach Oil Development Company historically was the contractor who operated the wells, while Tidelands Oil Company has operated the wells since 1989 (Shemaria, pers. comm. 1999).

The exact number and location of all oil wells, pipelines, and former storage tanks constructed on current Navy property is not known because of incomplete recordkeeping. A 1992 well location map maintained by Tidelands Oil Production Company, which currently operates and maintains the few remaining oil wells on Pier E, shows 14 producing oil wells and 97 abandoned oil wells on Navy property. The 14 remaining active wells within the shipyard are located on the hill east of Drydock 1, next to the eastern side of Building 300, in parking lot B, and south of Building 314. Several pipelines traverse Pier E, and although no current storage facilities exist, historical photographs indicate aboveground storage tanks existed on the

northern end of Pier E that are suspected to have stored oil. These tanks existed approximately where Lot B and Building 300 now exist. The direction of flow for shallow groundwater along Pier E is suspected to be generally to the north.

IR Site 11 is located on the western side of the Pier E oil field, while IR Sites 12 and 13 are located in the southwestern section of the oil field as shown in Figure 4.39-1.

4.39.2 Operational History and Waste Characteristics

Table 4.39-2 summarizes the operational history and waste characteristics.

Table 4.39-2
AOC HIST 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 1	1937 to present	Oil production and associated water injection due to subsidence.	Small spills associated with oil production and operations. Potential for releases of oil from leaks in pipelines.	Unknown. Tidelands Oil Production Company and the Navy do not have any records of major spills or leaks at the oil production areas.

AOC = Area of Concern HIST = Historical No. = Number

Oil production activities began on the property surrounding LBNSY in 1937 in the area referred to as the Wilmington Oil Fields (located mainly north and northeast of LBNSY). Oil production on Pier E was initiated in 1950. Pier E is relatively flat and has been built up with fill materials since the 1950s. The addition of fill was necessary because of widespread subsidence (on the order of 2 to 15 feet) attributed to the withdrawal of oil during the 1940s, 1950s, and 1960s that was centered around Terminal Island. Water injection wells were installed in the late 1950s on Pier E to minimize additional subsidence (LBNSY-ED 1996a). Ownership of Pier E reverted back to the City of Long Beach in 1998.

Tidelands Oil Production Company and the Navy do not have records of major spills at the oil production areas, but LBNSY personnel recall many incidents of small spills at various times. These occurrences were reportedly addressed expeditiously, and cleanup efforts were generally thorough (Johnson, pers. comm. 1998). Although historical spills and releases of oil are excluded from RCRA as hazardous waste, environmental impacts to the soil and possibly groundwater below Pier E may have occurred.

4.39.3 Preliminary Assessment Resources

Table 4.39-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.39-3
AOC HIST 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Tidelands Oil Maps Drawing Number C-516	1992	Tidelands Oil Production Company	Oil production wells (active and abandoned) on LBNSY property.
EBS	1996	LBNSY-ED	Historical information; Appendix F contains Tidelands map.
Final Remedial Investigation Report, Installation Restoration Program for Sites 8 through 13	1997	Bechtel National, Inc.	General information regarding subsidence issues at LBNSY.
Personnel Interview	1998	Ron Johnson, LBNSY	Oil production efforts at LBNSY and the potential for small spills.
Personnel Interview	1998, 1999	Mark Shemaria, Tidelands Oil Company	Oil production efforts at LBNSY and ownership.

AOC = Area of Concern
EBS = Environmental Baseline Survey
HIST = Historical
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard-Environmental Division

4.39.4 PA Recommendations

Further action was recommended for the Former and Current Oil Production Areas because of the number of years of operation, the inadequate record keeping of maps and spill history, the likelihood of leaks in oil pipelines, and the likelihood of oil spills during normal operations. Soil and groundwater sampling were recommended in Work Plan Addendum Number 2 (CDM Federal 1999) on Pier E at locations along selected abandoned and active wells and pipelines where there may have been leaks or spills. Samples were recommended for analysis for TPH, SVOCs including polynuclear aromatic hydrocarbons (PAHs), and metals from crude oil.

4.39.5 Number of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), a total of 10 soil and 10 groundwater samples were collected. These samples were collected on 2, 3, and 4 March 1999 at locations shown in Figure 4.39-5.

Table 4.39-4
AOC HIST 1 Number of Samples and Analyses

Matrix	SVOCs	TPH-Diesel	TPH-Motor Oil [b]	Metals
Soil	10	10	10	10
Groundwater	10	10	10	10 [a]

Notes:

(a) Dissolved metals.

(b) TPH-Motor oil does not mean that motor oil was analyzed for; instead, it means that petroleum hydrocarbons with carbon ranges similar to motor oil (e.g., C_{24} to C_{36}) were analyzed for.

AOC = Area of Concern
HIST = Historical
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons

4.39.6 Analytical Results

Analytical results are discussed below for soil and groundwater. All organic compounds detected in the AOC HIST 1 soil and groundwater samples, as well as their corresponding industrial PRGs for soil and screening criteria for groundwater, are presented in Table 4.39-5. Organic detections are also indicated on Figure 4.39-6 and summarized in Table 4.39-6 by analytical category. Table 4.39-5 summarizes organic compound results, including detections above screening criteria for each analyte.

Metals results are summarized in Table 4.39-7, along with their industrial PRGs for soil, screening criteria for groundwater, and background levels for both soil and groundwater. Because metals are naturally occurring, only those metals with results above background levels and screening criteria are shown in Figure 4.39-6.

4.39.6.1 Soil

SVOCs, TPH-diesel, TPH-motor oil, or metals were detected in at least one sample, as indicated in Tables 4.39-5 and 4.39-6. Fourteen of the seventeen metals were detected at AOC HIST 1.

The highest concentration of TPH-motor oil was identified in sample 99SY-HI1g-S-5, which is located east of Drydock No. 1 and west of Building 314. The sample was collected near abandoned pipelines and wells used in previous oil production activities. The following SVOCs were also detected in the sample at this location: benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. The results of the metals analysis detected lead at an elevated level

of 1820 mg/kg in sample 99SY-HI1g-S-5, located between IR Sites 11 and 12/13. During the RI performed in 1997 (BNI 1997a), a sample (labeled HP-12-26) located about 300 feet south of sample 99SY-HI1g-S-5 also detected an elevated concentration of lead (1350 mg/kg) (see Figure 5-68, BNI 1997a). Chromium, copper, zinc, and mercury were also detected at elevated levels (BNI 1997a). The source of these elevated metals was unknown, but the maximum extent of contamination was considered to be known because samples in various directions were collected and did not contain elevated levels of metals BNI 1997a).

4.39.6.2 Groundwater

SVOCs, TPH-diesel, TPH-gasoline, or metals were detected in at least one sample as indicated in Tables 4.39-5, 4.39-6, and 4.39-7, as well as in Figure 4.39-6. Fourteen of the seventeen metals were detected at AOC HIST 1.

At sample location HI1a adjacent to the eastern side of Building 300, the first attempt to collect a groundwater sample failed because the screen became clogged with oil, which was visually apparent when the screen was lifted to the surface. No sample was collected at that depth. A new screen was then lowered, but to a depth approximately 10 feet deeper. Sample 99SY-HI1a-W-27.2 was then collected and had concentrations of 0.2 J mg/L TPH-diesel, 0.1 J TPH-oil, and 0.002 J mg/L 2-methylnaphthalene. The sampling location is shown in the photograph shown as Figure 4.39-3.

Sample 99SY-HI1b-W-25.9, collected in a parking lot approximately 400 feet east of Building 300, was observed to be slightly yellow in color and had detections of 0.1 J mg/L TPH-diesel, 0.002 J bis(2-ethylhexyl)phthalate (BEHP), and 0.004 J mg/L naphthalene.

Groundwater sample 99SY-HI1g-W-22.1 contained brown oil droplets and had detections of 0.8 mg/L TPH-diesel, 0.5 mg/L TPH-oil, 0.006 J mg/L diethyl phthalate (DEP), and 0.005 J mg/L BEHP.

TPH-diesel and TPH-oil were detected in 9 groundwater samples and 4 groundwater samples, respectively, with the highest concentrations in sample 99SY-HI1g-W-22.1 that contained oily droplets. BEHP was detected in 8 of the 10 groundwater samples, at concentrations ranging from 0.001 to 0.007 mg/L.

4.39.7 Data Comparison to Screening Criteria

<u>Soils</u>

Two SVOCs, benzo(a)pyrene and benzo(b)fluoranthene, were detected above their respective industrial PRGs in soil sample 99SY-HI1g-S-5. Benzo(a)pyrene was detected at a concentration 1.3J mg/kg which exceeded the industrial PRG of 0.36 mg/kg. Benzo(b)fluoranthene was detected at a concentration of 3.73 mg/kg which exceeded its

industrial PRG of 3.6 mg/kg. Also, benz(a)anthracene exceeded its residential PRG. No TPH concentrations exceeded screening criteria.

Concentrations of 13 of the 14 metals detected in the soil samples were below their respective industrial PRG and/or below background levels. For sample 99SY-HI1g-S-5, lead was detected at a concentration of 1820 mg/kg which exceeded the industrial PRG of 1000 mg/kg and the background level of 185.2 mg/kg. Sample 99SY-HI1g-S-5 was located near an oil well that has been removed, midway between IR Sites 11 and 12/13, and 300 feet north of a sample from the RI that had similar metals concentrations. Lead was detected in one IR Site 12/13 soil sample in 1996 (approximately 300 feet away from sampling location HI1g sampled under the AOCs Investigation) (BNI 1997a). Section 6.5.1.4 of the RI Report concluded that lead up to 4,200 mg/kg was considered "safe," based on a human health risk assessment. Because the AOC sample result of 1,820 mg/kg did not exceed this calculated "safe" concentration of 4,200 mg/kg, and the same receptor scenarios apply, this lead concentration of 1820 mg/kg is considered below the human health risk screening criteria. Beyond lead, chromium and copper were detected above their residential PRG but not their industrial PRG.

Groundwater

No TPH concentrations exceeded screening criteria, although an oily substance was observed adjacent to the eastern side of Building 300 at the water table. BEHP was detected above the screening criteria level of 0.0035 mg/L in two groundwater samples: 99SY-HI1g-W-22.1 at a concentration of 0.005J and 99SY-HI1i-W-25 at a concentration of 0.007J.

Concentrations of the 14 metals detected in the groundwater samples were below their respective industrial PRG and/or below background levels. The pH values for the groundwater samples are within the acceptable range for the Ocean Plan criteria (6.0 to 9.0 pH units), and within the range of pH values typical of groundwater at LBNSY (BNI 1997a).

4.39.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

As noted in Section 4.39.6.2, groundwater sample 99SY-HI8a-W-27.2 may not be representative of potential groundwater contamination. The oily substance observed at the water table clogged the well screen and no sample could be collected at that depth. A new well screen was lowered an additional 10 feet to allow sample collection at a depth of approximately 37 feet bgs.

TPH results designated by the laboratory as TPH-diesel and TPH-motor oil do not mean that diesel or motor oil were the exact petroleum products identified. Instead, they represent the range of petroleum hydrocarbons present in the sample (i.e., C_{12} to C_{24} for TPH-diesel and C_{24} to C_{36} for TPH-motor oil).

TPH-diesel results lower than approximately 0.15 mg/L (5 of the 10 groundwater samples at this AOC) should be used with caution because false positives may have occurred, as described in Appendix O.

BEHP was not a suspected site contaminant and is a common laboratory contaminant, so it is suspected that the reported BEHP result may be a result of laboratory contamination as discussed in Appendix O. The Nine Group B AOCs Report, dated 24 November 1998, recommended no further action at two AOCs where BEHP was reported at concentrations of 0.005 and 0.009 mg/L in groundwater samples (above the Ocean Plan criterion of 0.0035 mg/L). Regulatory agency approval for no further action was received for these two AOCs (CDM Federal 1998d).

4.39.9 Recommendations

Although this investigation identified potential contamination at various locations of the former and current oil production areas, No Further Action is recommended for the Department of the Navy. This recommendation is based on the City of Long Beach ownership of the oil production areas on, or adjacent to, the former Navy property. The information collected during this investigation will be forwarded to the City of Long Beach through the Navy contacts at the Port of Long Beach. Any further environmental actions regarding the oil field production areas are the responsibility of the City of Long Beach.

Table 4.39-5
AOC HIST 1 Sample Detections Summary for Organic Compounds
March 1999

Sample Identifier	Analyte Detected	Soil Sample Depth, feet bgs	Concentration in Soil (mg/kg)	Industrial PRG[a] (mg/kg)	Groundwater Sample Depth, feet bgs	Concentration in Groundwater (mg/L)	Screening Criteria for Water[b] (mg/L)
HI1a	TPH-diesel	6	ND	10,000[c]	27.2	0.2J	NA
	TPH-motor oil	6	ND	50,000[c]	27.2	0.1J	25
	Bis(2-ethylhexyl)phthalate	6	ND	210	27.2	0.003J	0.0035
	2-Methylnaphthalene	6	ND	NA	27.2	0.002J	NA
HI1b	TPH-diesel	5	ND	10,000[c]	25.9	0.1J	NA
	Bis(2-ethylhexyl)phthalate	5	ND	210	25.9	0.002J	0.0035
	Naphthalene	5	ND	190	25.9	0.004J	0.0062[e]
	TPH-motor oil	5	8J	50,000[c]	25.9	ND	25
HI1c	TPH-diesel	4	8J	10,000[c]	23.2	0.05J	NA
	TPH-motor oil	4	180	50,000[c]	23.2	0.03J	25
	Bis(2-ethylhexyl)phthalate	4	ND	210	23.2	0.003J	0.0035
HI1d	TPH-diesel	5	3J	10,000[c]	24	0.4J	NA
	TPH-motor oil	5	2J	50,000[c]	24	0.2J	25
HI1e	TPH-diesel	5	ND	10,000[c]	18.7	0.07J	NA
	TPH-motor oil	5	50	50,000[c]	18.7	ND	25
	Bis(2-ethylhexyl)phthalate	5	0.10J	210	18.7	0.002J	0.0035
HI1f	TPH-diesel	5	ND	10,000[c]	18	0.1J	NA
	TPH-motor oil	5	3J	50,000[c]	18	ND	25
	Bis(2-ethylhexyl)phthalate	5	ND	210	18	0.001J	0.0035
HI1g	TPH-diesel	5	ND	10,000[c]	22.1	0.8	NA
	TPH-motor oil	5	3900	50,000[c]	22.1	0.5	25
	Bis(2-ethylhexyl)phthalate	5	ND	210	22.1	**0.005J**	0.0035
	Diethyl phthalate (DEP)	5	ND	100,000	22.1	0.006J	33
	Benz(a)anthracene	5	2.19	3.6	22.1	ND	8.8×10^{-6}
	Benzo(a)pyrene	5	**1.3J**	0.36	22.1	ND	8.8×10^{-6}
	Benzo(b)fluoranthene	5	**3.73**	3.6	22.1	ND	8.8×10^{-6}
	Benzo(g,h,i)perylene	5	0.38J	NA	22.1	ND	8.8×10^{-6}
	Chrysene	5	2.24	360	22.1	ND	8.8×10^{-6}
	Fluoranthene	5	6.5	37,000	22.1	ND	0.015
	Indeno(1,2,3-cd)pyrene	5	0.39J	3.6	22.1	ND	8.8×10^{-6}
	Phenanthrene	5	0.98J	NA	22.1	ND	8.8×10^{-6}
	Pyrene	5	4.7	26,000	22.1	ND	8.8×10^{-6}

4.39-8

Table 4.39-5 (continued)
AOC HIST 1 Sample Detections Summary for Organic Compounds
March 1999

Sample Identifier	Analyte Detected	Soil Sample Depth, feet bgs	Concentration in Soil (mg/kg)	Industrial PRG[a] (mg/kg)	Groundwater Sample Depth, feet bgs	Concentration in Groundwater (mg/L)	Screening Criteria for Water[b] (mg/L)
HI1h	TPH-diesel	5	3J	10,000[c]	16.3	0.09J	NA
HI1i	TPH-diesel	5	3J	10,000[c]	25	0.2J	NA
	TPH-motor oil	5	3J	50,000[c]	25	ND	25
	Bis(2-ethylhexyl)phthalate	5	ND	210	25	**0.007J**	0.0035
HI1j	TPH-diesel	5	2J	10,000[c]	30	ND	NA
	TPH-motor oil	5	3J	50,000[c]	30	ND	25
	Bis(2-ethylhexyl)phthalate	5	ND	210	30	0.002J	0.0035

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
N/A = Not Applicable
BEHP = Bis(2-ethylhexyl)phthalate
Bgs = below ground surface
ND = Not Detected
J = Estimated Concentration
TPH = Total Petroleum Hydrocarbons
HIST = Historical
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available

Table 4.39-6
AOC HIST 1 Sample Results Summary for Organic Compounds
March 1999

	SOIL			GROUNDWATER		
Analytical Parameters	**No. of Samples**	**No. of Detections**	**Number of Detections above PRGs[a]**	**No. of Samples**	**No. of Detections**	**No. of Detections above Screening Criteria for Water[b]**
VOCs (60 Analytes)	10	0	0	10	0	0
SVOCs (64 analytes)[c]						
Bis(2-ethylhexyl)phthalate	10	1	0	10	8	2
2-Methylnaphthalene	10	0	0	10	1	0
Naphthalene	10	0	0	10	1	0
Diethyl phthalate (DEP)	10	0	0	10	1	0
Benz(a)anthracene	10	1	0	10	0	0
Benzo(a)pyrene	10	1	1	10	0	0
Benzo(b)fluoranthene	10	1	1	10	0	0
Benzo(g,h,i)perylene	10	1	0	10	0	0
Chrysene	10	1	0	10	0	0
Fluoranthene	10	1	0	10	0	0
Indeno(1,2,3-cd)pyrene	10	1	0	10	0	0
Phenanthrene	10	1	0	10	0	0
Pyrene	10	1	0	10	0	0
TPH-Diesel	10	5	0	10	9	0
TPH-Motor Oil	10	8	0	10	4	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for screening criteria for water.
(c) If not listed in the table, the remaining analytes were not detected.

AOC = Area of Concern
BEHP = Bis(2-ethylhexyl)phthalate
HIST = Historical
No. = Number
PRG = Preliminary Remediation Goal
SVOC = Semivolatile Organic Compound
TPH = Total Petroleum Hydrocarbons
VOC = Volatile Organic Compound

Table 4.39-7
AOC HIST 1 Sampling Results Summary for Metals
March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	10	6	0.75J, 1.2, 11.8, 0.54, 0.37, 0.45	750	11.3	0
Arsenic	10	10	2.5J, 3.8, 2.9, 3.3, 5.8, 1.8, 3.0, 3.3, 3.2, 4.3	3.0	17.5	0
Barium	10	10	77.8, 94.9, 66.6J, 90.8, 171, 23.7, 46.9, 94.9, 80.9, 71.8	100,000	275	0
Beryllium	10	0	ND	3,400	1.4	0
Cadmium	10	3	0.17, 0.69, 0.053	930	1.7	0
Chromium	10	10	11.7, 15.5, 9.9J, 14.4, 30.7, 9.9, 214, 16.5, 11.7, 18.0	450	60.9	0
Cobalt	10	10	5.5J, 9.7, 5.1, 6.8, 17.0, 4.1, 7.0, 8.6, 6.4, 10.0	29,000	24.5	0
Copper	10	10	6.3J, 14.5, 5.6, 6.3, 30.3, 4.2, 3410, 19.2, 6.0, 9.9	70,000	798.7	0
Lead	10	10	1.7J, 3.9, 1.4, 1.7, 8.5, 1.2, **1820**, 5.1, 1.6, 4.6	1,000	185.2	1
Mercury	10	5	0.045J, 0.058, 0.050, 5.7, 0.033	560	2.5	0
Molybdenum	10	1	2.3	9,400	NA	0
Nickel	10	10	7.8, 12.4, 7.1, 9.5, 23.7, 6.1, 53.5, 11.4, 7.9, 11.1	37,000	32.6	0
Selenium	10	2	0.11J, 0.86	9,400	1.4	0
Silver	10	0	ND	9,400	1.5	0
Thallium	10	0	ND	150	4.2	0
Vanadium	10	10	19.9, 31.9, 17.4, 24.2, 55.3, 15.3, 74.1, 32.7, 22.6, 30.8	13,000	84.9	0
Zinc	10	10	28.5, 47.8, 27.1, 32.7, 89.3, 19.5, 971, 36.3, 29.8, 30.4	100,000	844.9	0

Table 4.39-7 (continued)
AOC HIST 1 Sampling Results Summary for Metals
March 1999

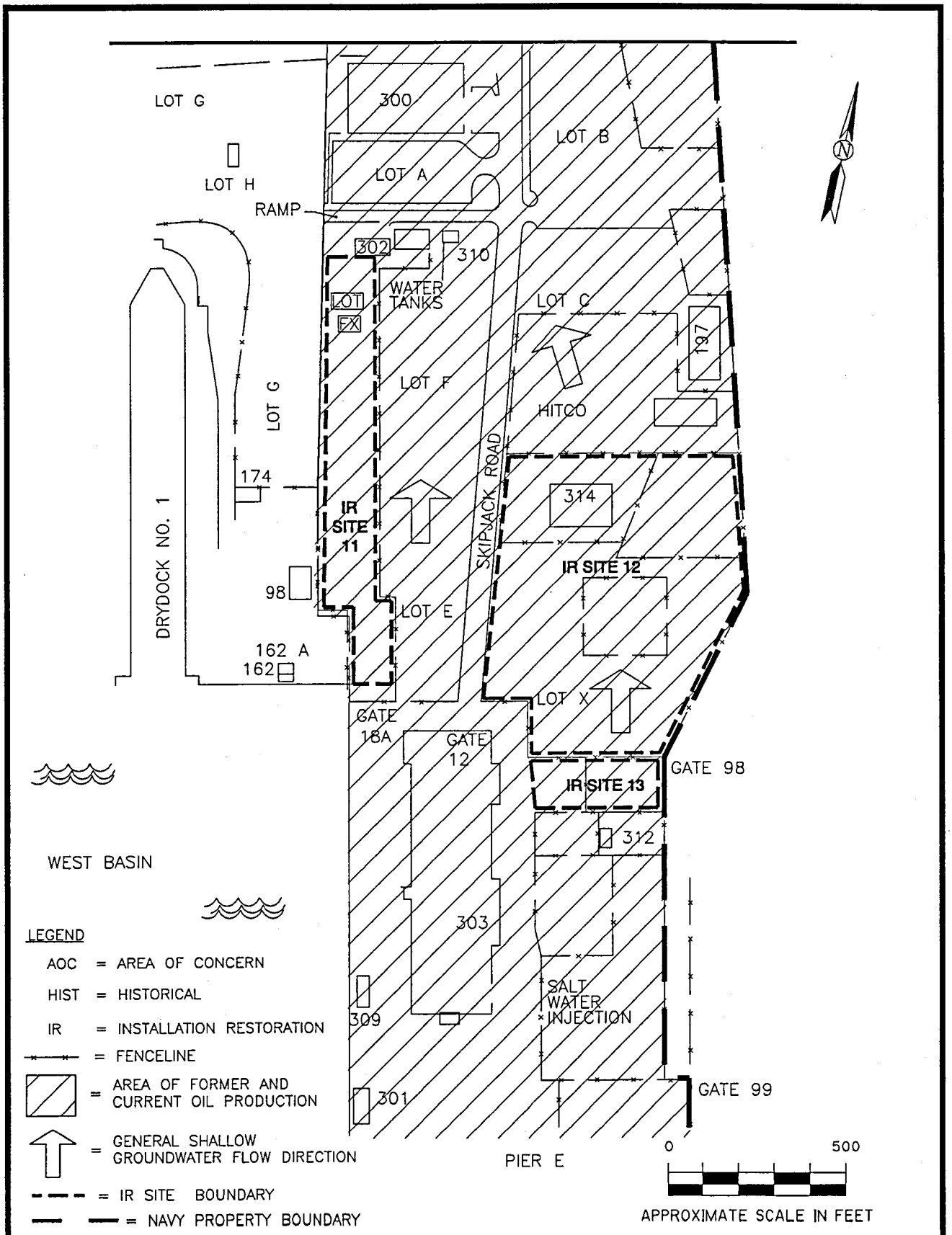
GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Industrial PRG and Background**
Antimony	10	1	0.0028J	1.2	0.0616	0
Arsenic	10	3	0.0246, 0.0077, 0.0072	0.008	0.0276	0
Barium	10	10	0.159J, 0.114J, 0.0288, 0.171J, 0.217J, 0.193J, 0.0995J, 0.108J, 0.286, 0.203	1[d]	0.1777	0
Beryllium	10	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	10	0	ND	0.001	0.0017	0
Chromium	10	4	0.0037J, 0.0182, 0.009, 0.0106	190	0.0029	0
Cobalt	10	1	0.0126	2.2[d]	0.0071	0
Copper	10	1	0.0391	0.003	0.1072	0
Lead	10	1	0.0029J	0.002	0.028	0
Mercury	10	2	0.000099J, 0.00023	$4.0x10^{-5}$	0.0009	0
Molybdenum	10	7	0.018, 0.0557, 0.0163, 0.0098, 0.0169, 0.0159, 0.0913	0.18[d]	NA	0
Nickel	10	4	0.0114, 0.0194, 0.0233, 0.0195	0.005	0.0958	0
Selenium	10	5	0.0059, 0.0053, 0.0059, 0.0037, 0.0047	0.015	0.040	0
Silver	10	1	0.0016J	0.0007	0.0072	0
Thallium	10	0	ND	0.014	0.0075	0
Vanadium	10	2	0.00082J, 0.126	0.26[d]	0.0107	0
Zinc	10	4	0.0046J, 0.0153, 0.0073, 0.011	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 1 FORMER AND CURRENT OIL PRODUCTION AREAS GROUP B AREAS OF CONCERN	FIGURE 4.39-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.39-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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Figure 4.39-2 Current Oil Production Area (AOC HIST 1) between Buildings 302 and 303, Facing South 8/3/98

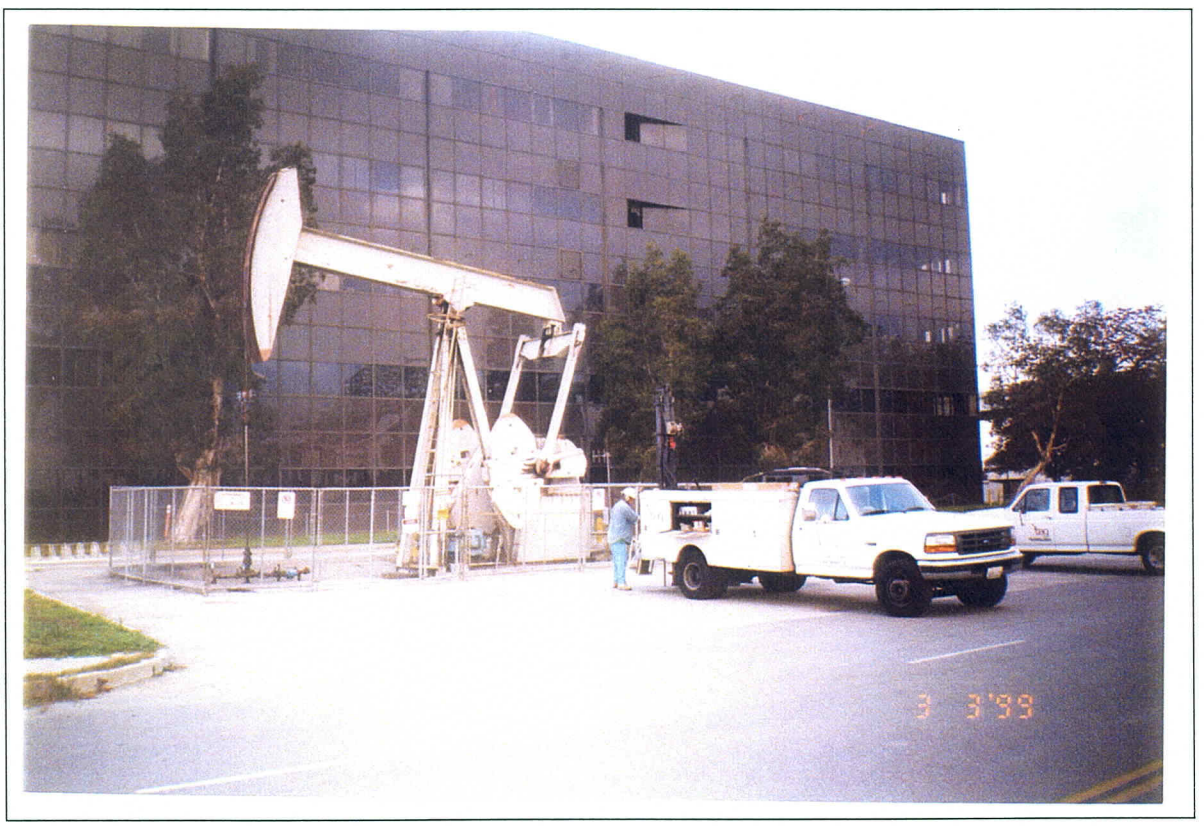
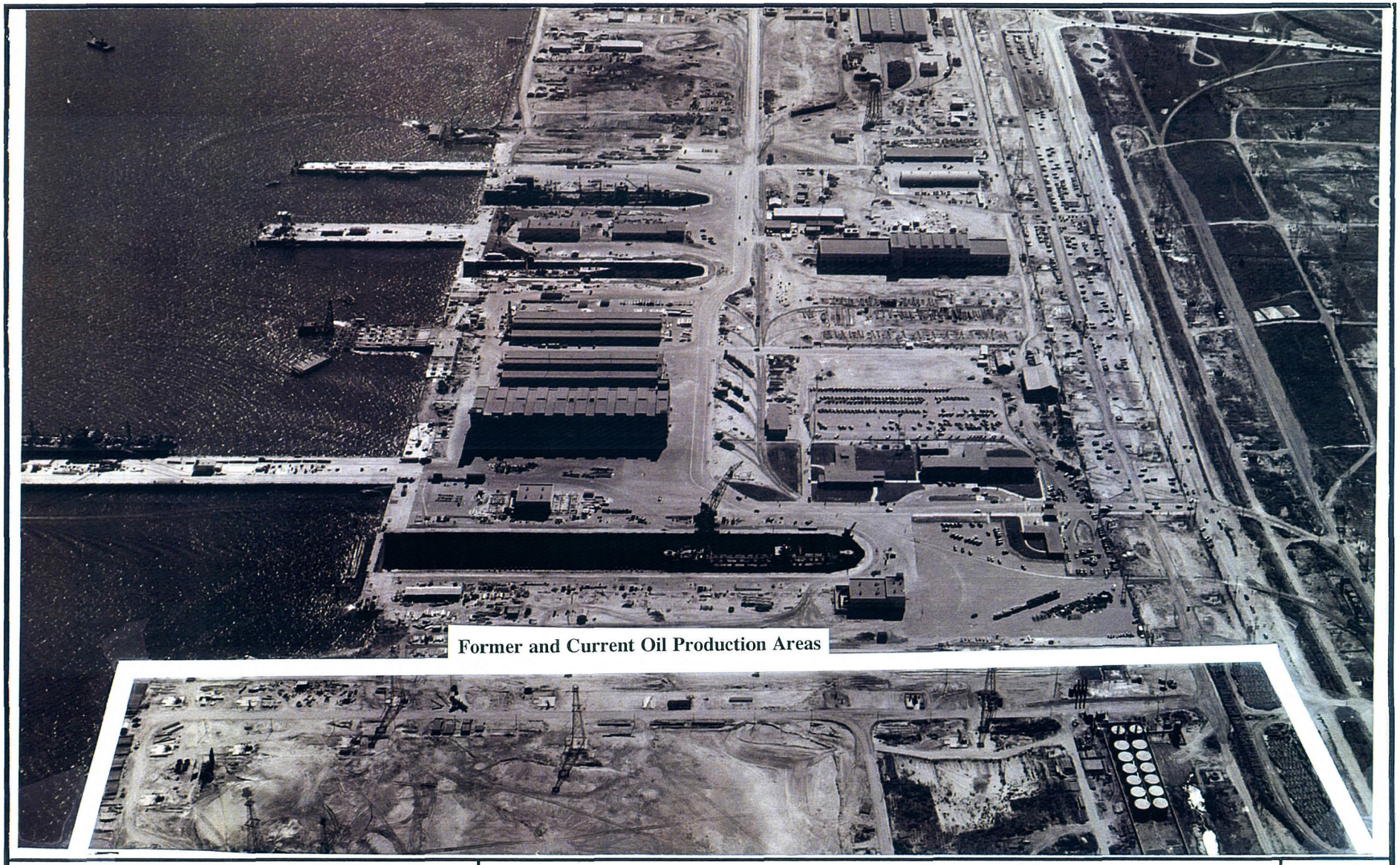


Figure 4.39-3 Sampling east of Building 300, Sample Location HI1a, Current Oil Production Area (AOC HIST 1) Facing West 3/3/99

4.39-14



LONG BEACH NAVAL SHIPYARD, AUGUST 1943

AOC = AREA OF CONCERN
UST = UNDERGROUND STORAGE TANK

FN: 4.39-4

AOC HIST 1
FORMER AND CURRENT OIL PRODUCTION AREAS BETWEEN BUILDINGS 302 AND 303

GROUP B AREAS OF CONCERN

FIGURE
4.39-4

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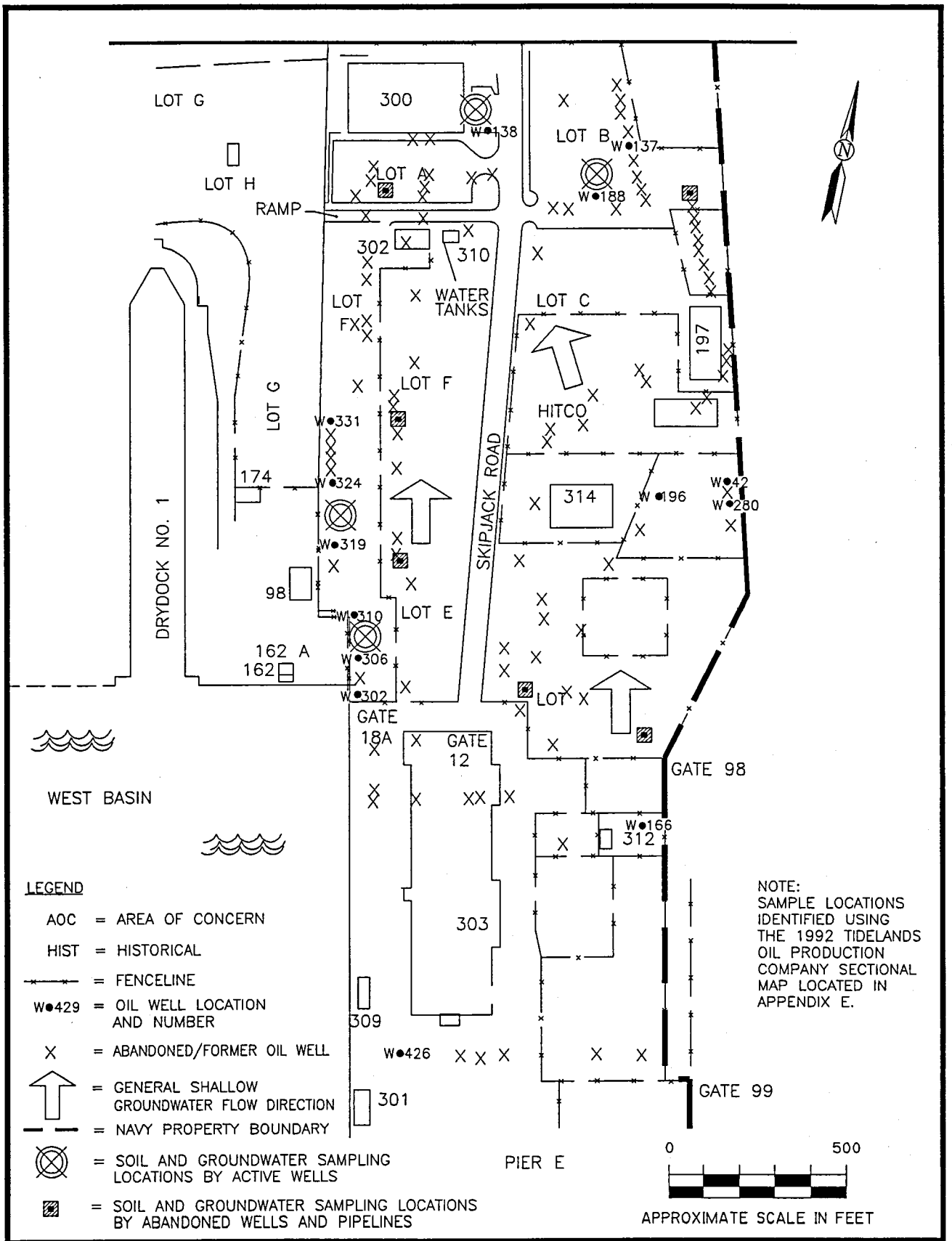

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC HIST 1 FORMER AND CURRENT OIL PRODUCTION AREAS GROUP B AREAS OF CONCERN	FIGURE 4.39-5
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.39-5	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

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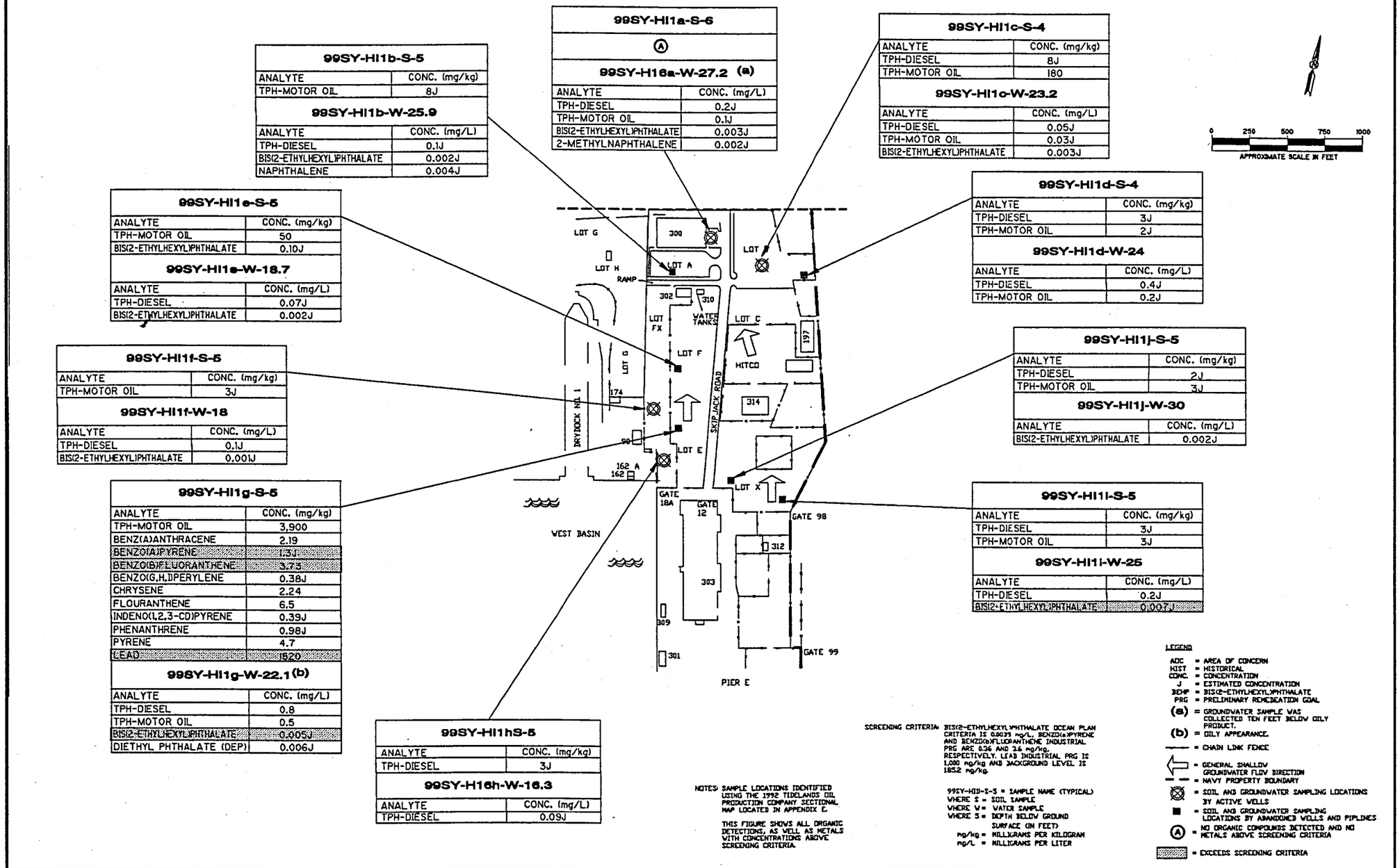

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.39.6
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, MARCH 1999
AOC HIST 1
FORMER AND CURRENT OIL PRODUCTION AREAS

GROUP B AREAS OF CONCERN

FIGURE
4.39-6

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

4.40 ACETYLENE GENERATING PLANT AND SLUDGE PIT (AOC HIST 2)

This section presents a description of the former acetylene generating plant and sludge pit at Building 51 (AOC HIST 2), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.40.1 Site Description

Table 4.40-1 summarizes the location and characteristics of AOC HIST 2. A site map is provided as Figure 4.40-1. Site photographs are shown in Figures 4.40-2 and 4.40-3.

Table 4.40-1
AOC HIST 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 2	West of Building 54	C-21	Former acetylene generating plant and associated sludge pit.	Building 51 and an associated sludge pit made of concrete.	31 feet by 10 feet by 11.5 feet deep.

AOC = Area of Concern HIST = Historical No. = Number

The acetylene generating plant at Building 51 was built in 1944. During the March 1998 site reconnaissance, the area was observed to be part of the current transportation yard (see Section 4.60). The plant was located approximately 150 feet west of where Building 54 is presently situated (LBNSY-PW 1944 and NEESA 1983). During the March 1998 site reconnaissance, the former pit was observed to be located where a truck scale currently exists (see Figure 4.40-2). The pit was approximately twice the size of the truck scale (LBNSY-PW 1963).

A second acetylene generating plant (Building 162A; AOC HIST 3, which was previously addressed in the PA Report for 25 AOCs dated 23 June 1998), was also used at LBNSY from 1943 to 1960 (NEESA 1983).

4.40.2 Operational History and Waste Characteristics

Table 4.40-2 summarizes the operational history and waste characteristics.

Table 4.40-2
AOC HIST 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 2	1944 to 1955	Acetylene generation.	Sludge consisting of calcium hydroxide in a lime slurry.	Approximately 90 to 150 gallons of sludge discharged per day to the sanitary sewer system (NEESA 1983).

AOC = Area of Concern
No. = Number
HIST = Historical
NEESA = Naval Energy and Environmental Support Activity

The method of acetylene generation is unknown, but a PA records search indicated that the most common acetylene generating process used prior to 1960 occurs according to the following equations:

$$CaO\ (s) + 3C \rightarrow CaC_2\ (s) + CO\ (g)$$

$$CaC_2\ (s) + 2H_2O \rightarrow Ca(OH)_2 + C_2H_2\ (g)$$

where

CaO = calcium oxide (quick lime)
C = carbon
CO = carbon monoxide
CaC_2 = calcium carbide
H_2O = water
$Ca(OH)_2$ = calcium hydroxide (hydrated lime)
C_2H_2 = acetylene
(s) = solid
(g) = gas

The sludge consists of calcium hydroxide discharge in a lime slurry containing approximately 90 percent water (Shreve and Brink 1977). Less common acetylene generating processes used petroleum products.

Building 51 reportedly had four gas generators associated with the acetylene generating plant. There was also an associated sludge pit located on the western side of Building 51. The waste was likely discharged to the sludge pit for treatment and/or storage before being discharged to

the sanitary sewer. The waste lime sludge was discharged to the sewer at a rate of approximately 90 to 150 gallons per day (NEESA 1983).

The years of operation of the plant are reported to be 1944 through 1955 (NEESA 1983), although a 1963 drawing indicates the pit was still in place at that time. It is unknown whether the ground surface surrounding Building 51 and the sludge pit was paved or not. Leaks and spills of lime or lime byproducts possibly occurred and may have entered the soil through cracks in pavement, if present at that time.

According to a 1963 drawing, the pit may actually have been two separate pits (LBNSY-PW 1963). The truck scale was built where the western portion of the pits existed by removing the water in the pits, then filling a portion of the pits with compacted fill material before constructing the truck scale.

4.40.3 Preliminary Assessment Resources

Table 4.40-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.40-3
AOC HIST 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY general site description map	1944	LBNSY-PW	Map showing the location of Building 51 and the associated sludge pit.
Drawing Number 8548	1963	LBNSY-PW	Pit size, truck scale to be built over pit.
Chemical Process Industries reference book	1977	Shreve, R. Norris, and Joseph A. Brink	Acetylene generation processes and associated byproducts.
Initial Assessment Study	1983	NEESA	General acetylene generation operations at LBNSY.

AOC = Area of Concern
HIST = Historical
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity

4.40.4 PA Recommendations

Further action, involving soil and groundwater sampling, was recommended for AOC HIST 2 because wastes were disposed directly into a pit. Because the historical discharge of caustic lime sludge is characterized by a high pH, the parameter of concern for soil and groundwater beneath the former acetylene generating plant and sludge pit is pH.

4.40.5 Number of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), one soil and one groundwater sample were collected. The samples were collected on 24 February 1999 and analyzed for pH as shown in Table 4.40-4.

Table 4.40-4
AOC HIST 2 Number of Samples and Analyses

Matrix	pH
Soil	1
Groundwater	1

AOC = Area of Concern HIST = Historical

4.40.6 Analytical Results

The soil pH result was 8.62 and the groundwater pH result was 7.65 as shown in Table 4.40-5.

Table 4.40-5
AOC HIST 2 Sampling Results Summary
February 1999

Analytical Parameter	No. of Samples	No. of Detections	Concentration (pH units)	Screening Criteria[a] (pH units)	No. of Detections above Screening Criteria
pH in Soil	1	1	8.62	NA	0
pH in Groundwater	1	1	7.65	6.0 to 9.0	0

Notes:

(a) See Section 3.7 for sources of criteria.

AOC = Area of Concern HIST = Historical No. = Number NA = Not Available

4.40.7 Data Comparison to Screening Criteria

The groundwater sample was within the screening criteria range of 6.0 to 9.0 pH units. No criteria for soil pH was identified, but the soil pH result was also within the range of 6.0 to 9.0 pH units.

4.40.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.40.9 Recommendations

No further action is recommended for the Acetylene Generating Plant and Sludge Pit (AOC HIST 2) because soil and groundwater samples were collected but no pH results were outside screening criteria.

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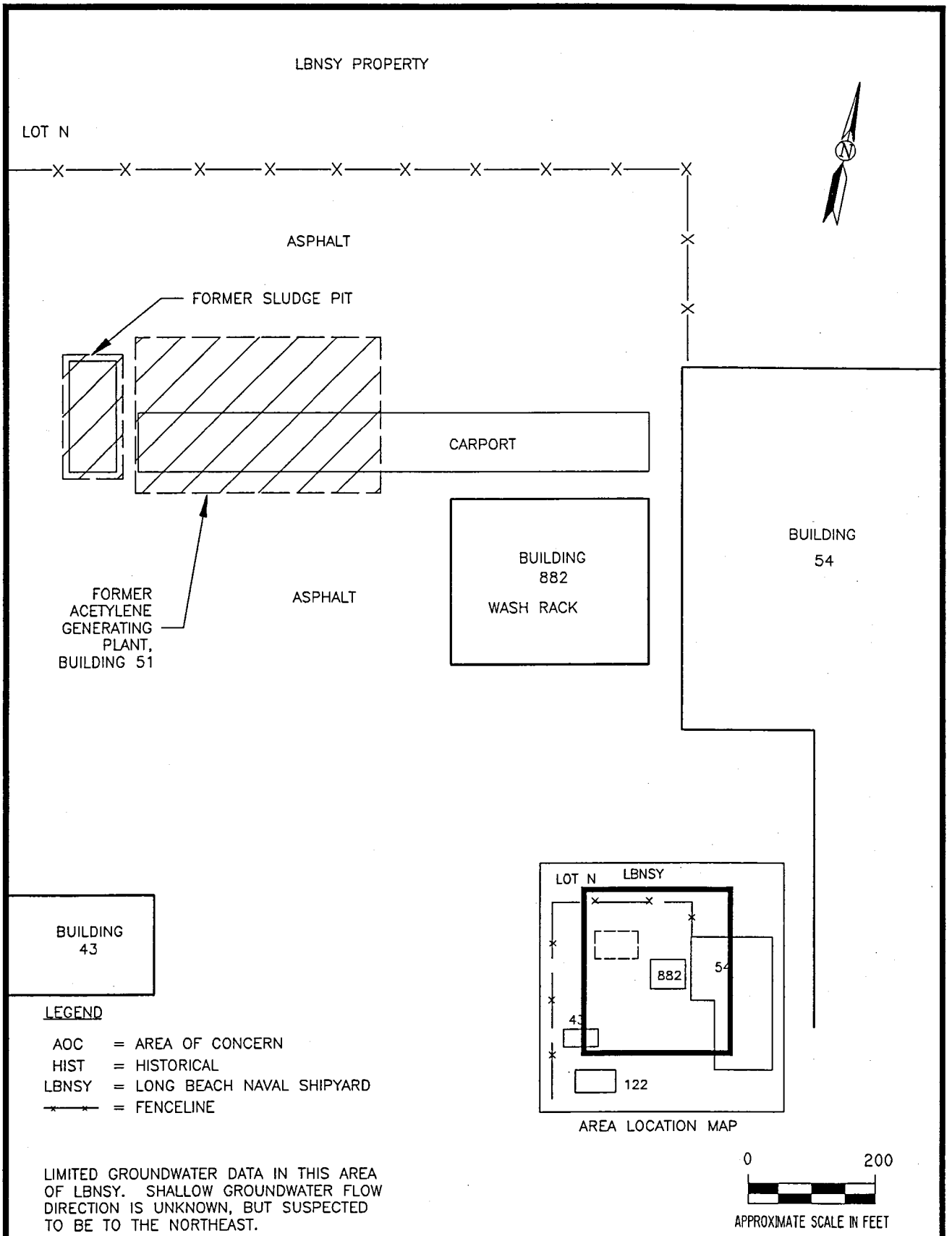

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 2 FORMER ACETYLENE GENERATING PLANT AND SLUDGE PIT	FIGURE 4.40-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.40-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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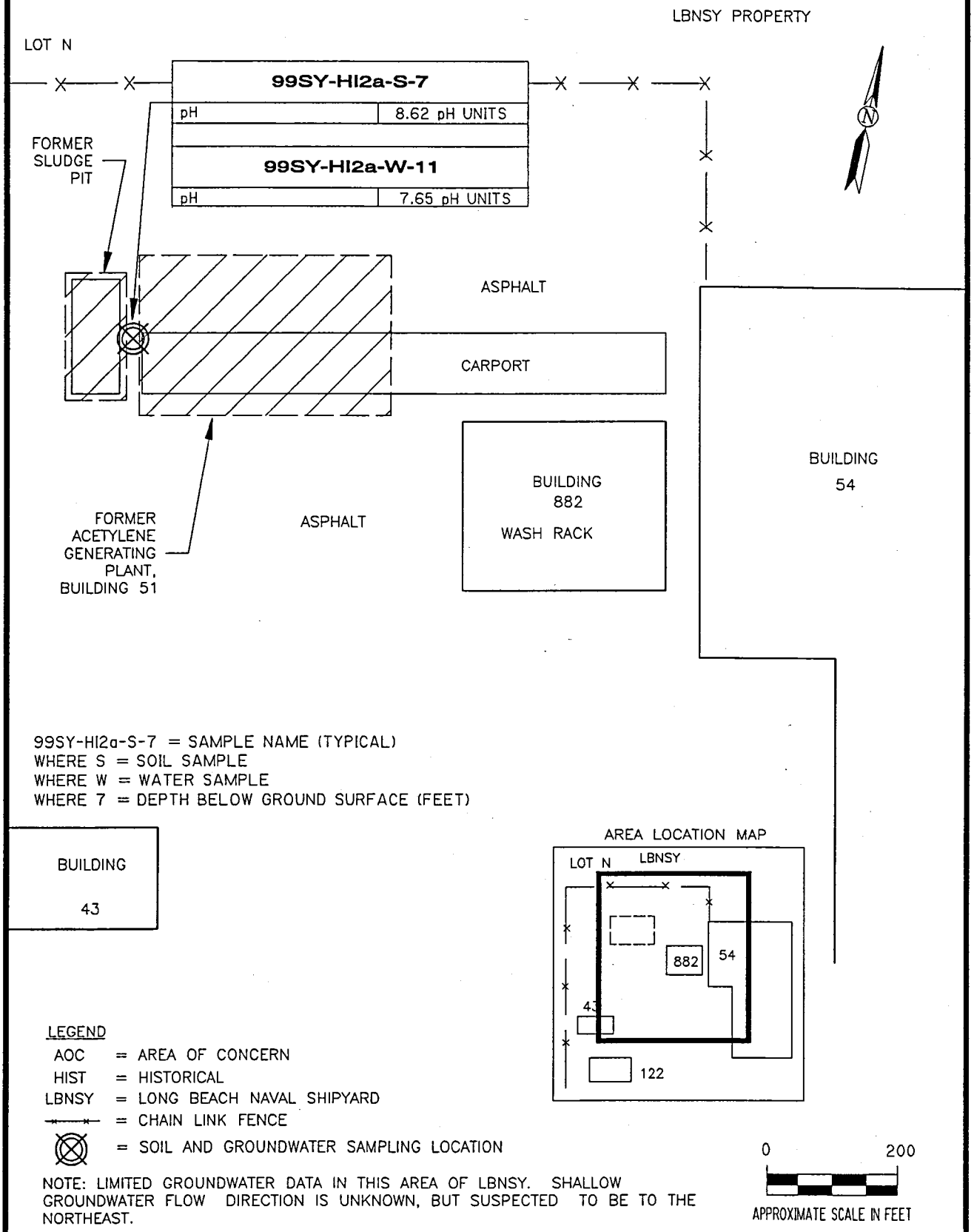
Figure 4.40-2 General Location of Former Building 51 (AOC HIST 2), Facing Southeast 3/19/98

Figure 4.40-3 Former Building 51 Location (AOC HIST 2), Facing Northwest 3/19/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATION AND RESULTS, FEBRUARY 1999 AOC HIST 2 FORMER ACETYLENE GENERATING PLANT AND SLUDGE PIT GROUP B AREAS OF CONCERN	FIGURE 4.40-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.40-4		
GROUP B AREAS OF CONCERN	PROJECT NO. 6210-014		

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4.41 FORMER INCINERATOR, BUILDING 163 (AOC HIST 4)

A description of the former incinerator (AOC HIST 4), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.41.1 to 4.41.4.

4.41.1 Site Description

Table 4.41-1 summarizes the location and characteristics of AOC HIST 4. A site map is provided as Figure 4.41-1. Site photographs are shown in Figures 4.41-2 to 4.41-5.

Table 4.41-1
AOC HIST 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 4	Northeast of Drydock 1	E-36, F-36	Incinerator and associated smoke stack.	One building (former Building 163) for incineration and an associated smoke stack.	Incinerator: approximately 50 feet long by 20 feet wide by 20 feet high. Smoke stack: 150 feet high and 7 feet in diameter.

AOC = Area of Concern HIST = Historical No. = Number

During the March 1998 site reconnaissance, the area of AOC HIST 4 was observed to be paved and used as a parking lot. No indications of the former incinerator (Building 163) or smoke stack were observed.

4.41.2 Operational History and Waste Characteristics

Table 4.41-2 summarizes the operational history and waste characteristics.

Table 4.41-2
AOC HIST 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 4	1944 to 1960	Incineration of confidential paperwork and general non-hazardous wastes.	Ash disposed of as domestic waste. Some air borne ash was emitted.	Unknown.

AOC = Area of Concern HIST = Historical No. = Number

Historical photographs (Figures 4.41-3 to 4.41-5) show both the construction and demolition of the smoke stack. Figure 4.41-2 shows that the area has since been paved with asphalt and that no evidence of past operations can be seen.

4.41.3 Preliminary Assessment Resources

Table 4.41-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.41-3
AOC HIST 4 Preliminary Assessment Resources Summary

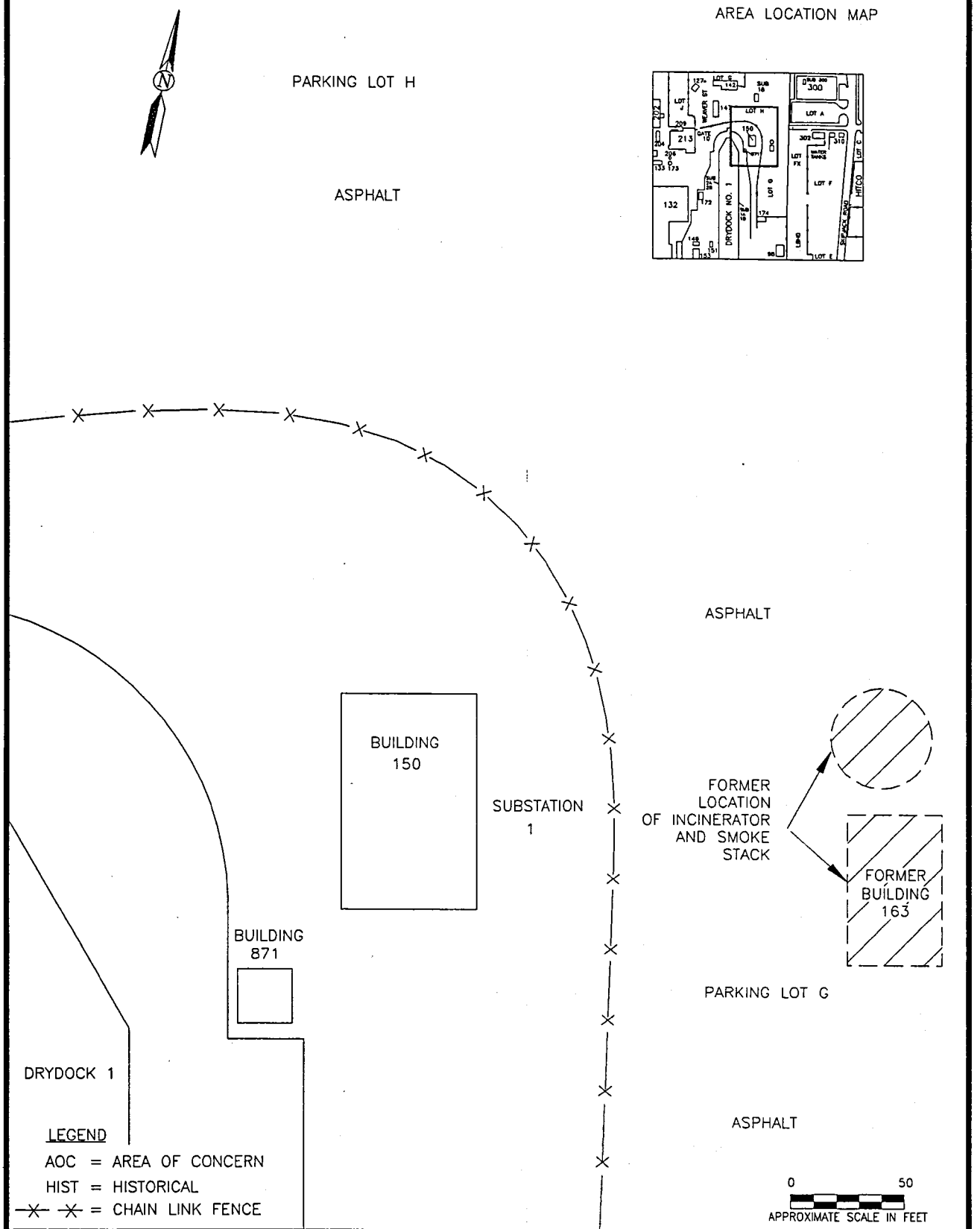
Resource	Date	Source	Summary
Historical Photos	1944 to 1960	LBNSY information repository	Pictures showing the construction of the incinerator and the smoke stack. Pictures showing the destruction of the smoke stack and incinerator.
Personnel Interview	1998	Johnson, LBNSY	General information regarding the use of the incinerator.

AOC = Area of Concern HIST = Historical LBNSY = Long Beach Naval Shipyard

4.41.4 PA Recommendations

No further action is recommended for AOC HIST 4 based upon the following findings:

- The incinerator and smoke stack were used to incinerate only non-hazardous materials;
- The ash was properly disposed of; and
- The site area was paved.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 4 FORMER INCINERATOR, BUILDING 163 GROUP B AREAS OF CONCERN	FIGURE 4.41-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.41-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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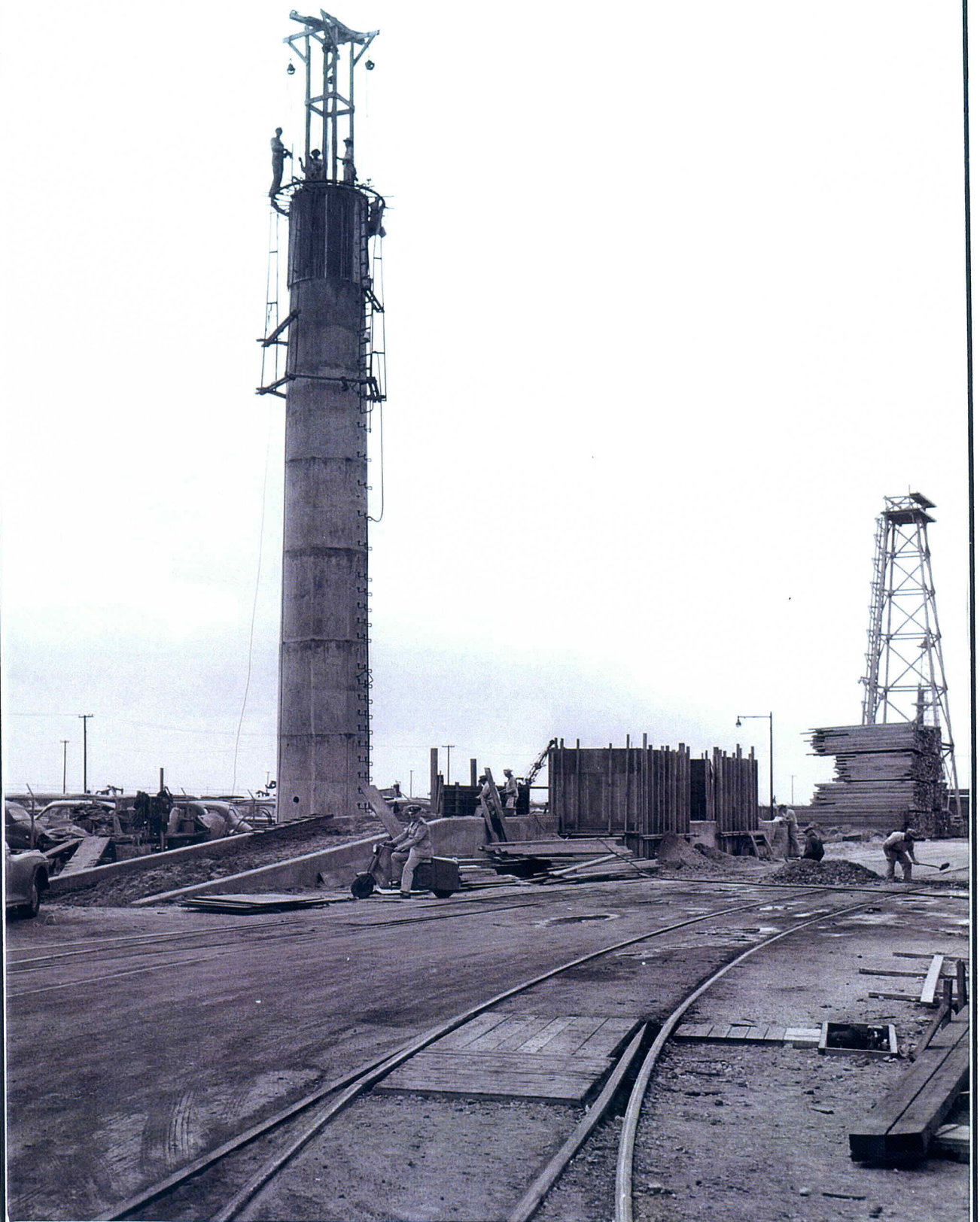
Figure 4.41-2 Former Incinerator (Building 163) Location (AOC HIST 4), Facing Northeast 2/13/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 4 US NAVY PHOTOGRAPH DURING INCINERATOR SMOKE STACK CONSTRUCTION GROUP B AREAS OF CONCERN	FIGURE 4.41-3
CDM Federal Programs Corporation *A Subsidiary Of Camp Dresser & McKee Inc.*	DATE: 2/99 FN: 4.41-3		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 4 PUBLIC WORKS PHOTOGRAPH OF INCINERATOR AREA, APRIL 1957 GROUP B AREAS OF CONCERN	FIGURE 4.41-4
CDM Federal Programs Corporation *A Subsidiary Of Camp Dresser & McKee Inc.*	DATE: 12/98 FN: 4.41-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 12/98
FN: 4.41-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC HIST 4
PUBLIC WORKS PHOTOGRAPH DURING INCINERATOR DEMOLITION, FEBRUARY 1960
GROUP B AREAS OF CONCERN

FIGURE
4.41-5

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.42 PLATE ABRASIVE BLASTING, FORMER BUILDING 125 (AOC HIST 6)

This section presents a description of the plate abrasive blasting facility (AOC HIST 6), its operational history and waste characteristics, PA resources used, and recommendations.

4.42.1 Site Description

Table 4.42-1 summarizes the location and characteristics of AOC HIST 6. A site map is provided as Figure 4.42-1 and a site photograph is shown in Figure 4.42-2.

Table 4.42-1
AOC HIST 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 6	Building 125; North of Building 129	C-30, C-31	Reportedly a sandblasting area (LBNSY-ED 1996a), but the AOC investigation identified only equipment storage activities.	Former Building 125.	90 feet by 70 feet by 12 feet in high.

AOC = Area of Concern
EBS = Environmental Baseline Survey
HIST = Historical
LBNSY-ED = Long Beach Naval Shipyard-Environmental Division
No. = Number

During the January and March 1998 site reconnaissances, only a portion of the concrete foundation of the former Building 125 could be observed. Building 201, located north of Building 129, currently exists where the former Building 125 existed.

4.42.2 Operational History and Waste Characteristics

Table 4.42-2 summarizes the operational history and waste characteristics.

Table 4.42-2
AOC HIST 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 6	1963 to mid-1970s	Storage of electrical equipment.	None.	None.

AOC = Area of Concern HIST = Historical No. = Number

Building 125 was built in 1963 and used for laydown (i.e., storage) of electrical equipment in association with Building 129 operations (LBNSY-PW 1996), as well as laydown of ships equipment (LBNSY Yard and Docks [Y&D] 1965). In the mid-1970s, Building 125 was moved to a location west of Building 210. Also in the mid-1970s, Building 216, a sandblasting facility, was built directly east of the original Building 125 location.

During the PA investigation, no information was found supporting the EBS claim that sandblasting activities occurred at Building 125. Also, historical records of sandblasting activities north of Building 129 indicate that sandblasting occurred at Building 216, not Building 125. Building 216 is addressed as AOC UST 2 in Section 4.176.

4.42.3 Preliminary Assessment Resources

Table 4.42-3 summarizes the resources used and interviews conducted in the PA evaluation.

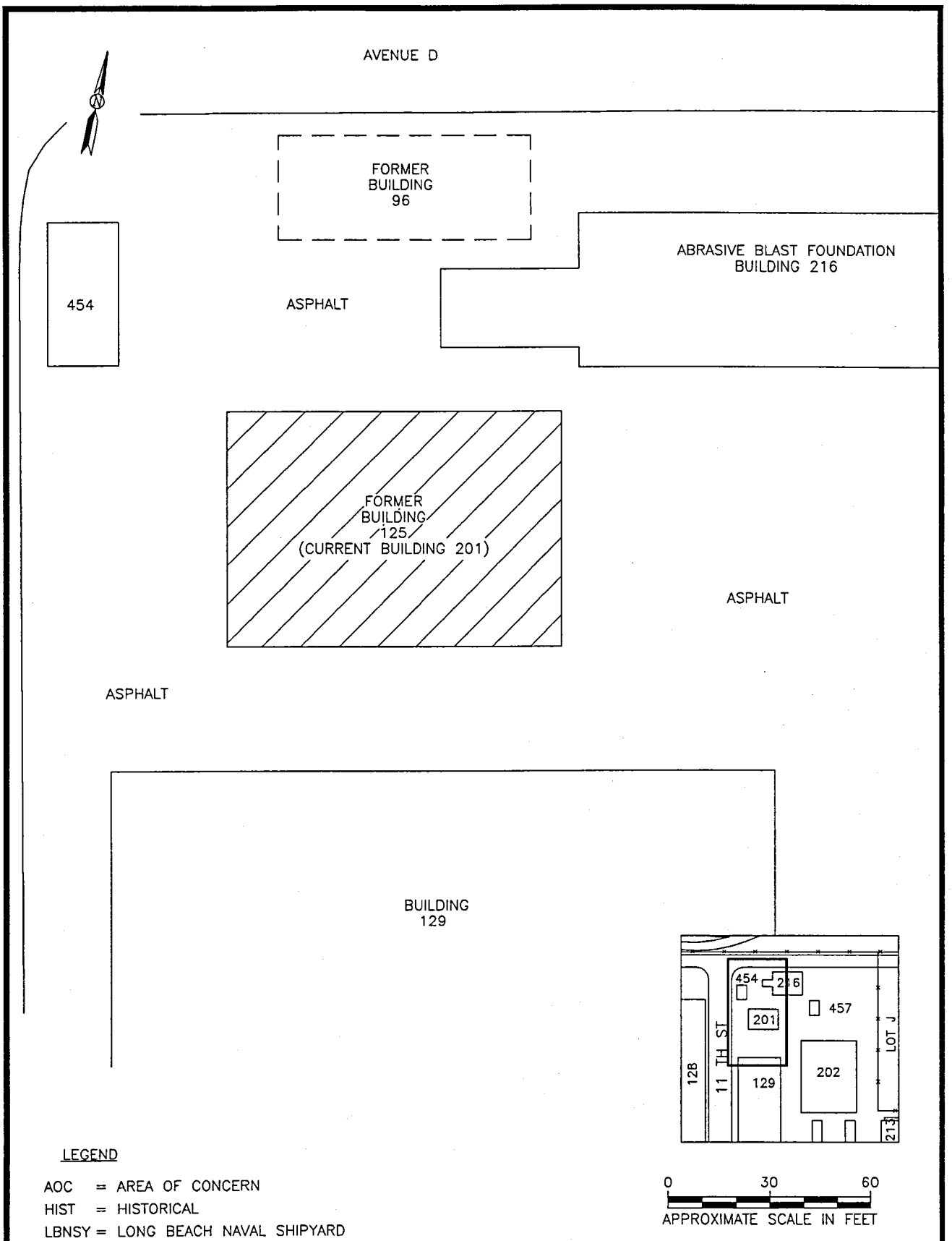
Table 4.42-3
AOC HIST 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 570,404	1965	LBNSY Y&D	Building 125 location.
Drawing No. 624,211	1965	LBNSY Y&D	Building 125 was ships equipment laydown building.
PW Drawing No. 11,999	1975	LBNSY Microfiche	Shows layouts, locations, and activities for Buildings 125 and 216.
Initial Assessment Study	1983	NEESA	Sandblasting information for LBNSY and specifically Building 216.
Environmental Baseline Survey	1996	LBNSY-ED	Identified this AOC.
PW Property Record	1996	LBNSY-ED	General information regarding Buildings 125 and 216.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PW = Public Works

4.42.4 PA Recommendations

No further action is recommended for AOC HIST 6 because no wastes were generated. Instead, sandblasting activities that generated wastes at nearby Building 216 are addressed in Section 4.176.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.42-1	4.42-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157	AOC HIST 6 PLATE ABRASIVE BLASTING FORMER BUILDING 125 GROUP B AREAS OF CONCERN	

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4.42-3

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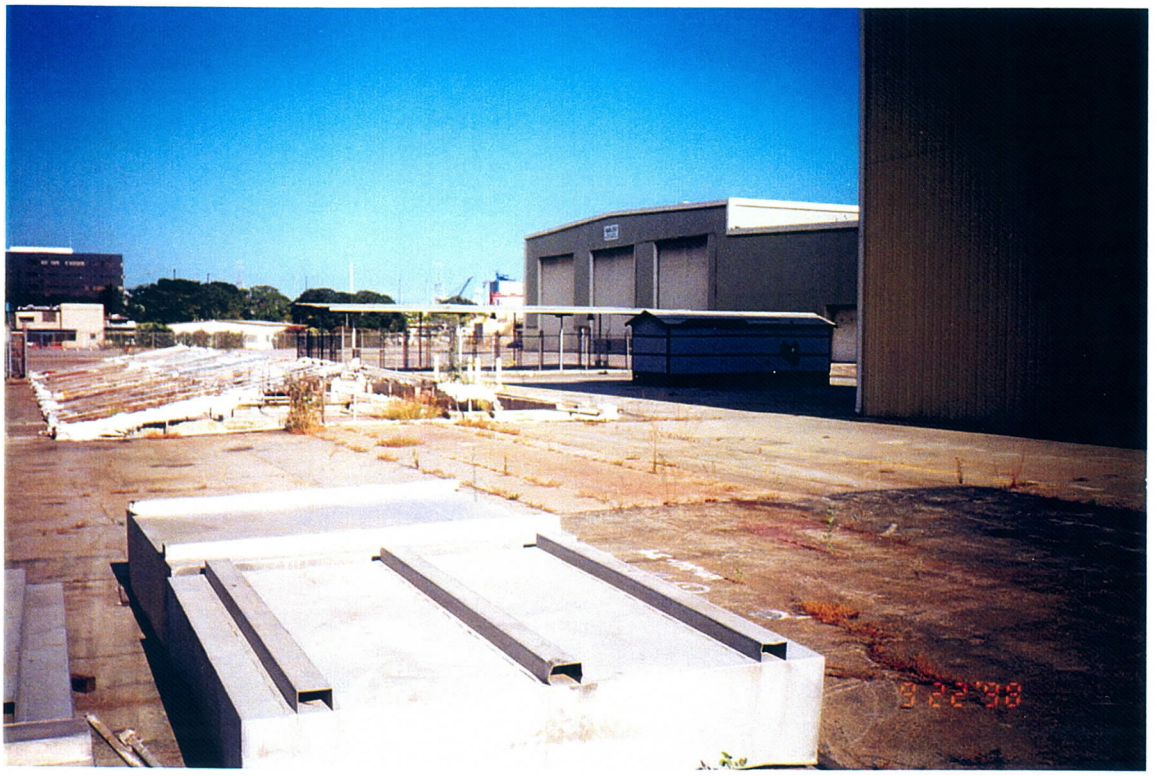


Figure 4.42-2 Former Building 125 Area (AOC HIST 6), Currently occupied by Building 201 9/22/98

4.43 PLATE ABRASIVE BLASTING (AOC HIST 7)

A description of the plate abrasive blasting facility (AOC HIST 7), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.43.1 to 4.43.4.

4.43.1 Site Description

Table 4.43-1 summarizes the location and characteristics of AOC HIST 7. A site map is provided as Figure 4.43-1 and a site photograph is shown in Figure 4.43-2.

Table 4.43-1
AOC HIST 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 7	West of Building 210	E-25	Ship/Electrical storage facility.	Former Building 125.	Building 125: 90 feet by 70 feet by 12 feet in high.

AOC = Area of Concern HIST = Historical No. = Number

AOC HIST 7 was identified by the EBS as a sandblasting facility at Building 125 west of Building 210 at grid number E-25 on Figure 1-3 of this report. The former Building 125 described in Section 4.42 was historically located north of Building 129 and apparently was moved to the location west of Building 210 in the mid-1970s. As described in Section 4.42, evidence suggests that storage of electrical equipment, rather than sandblasting, occurred at Building 125. According to LBNSY personnel, no sandblasting operations were conducted in this area west of Building 210 (Johnson, pers. comm., 1998).

During the March 1998 site reconnaissance, a concrete foundation outline of the former Building 125 was observed in the area west of Building 210. Building 210 was demolished in 1993. The area was observed to be paved with asphalt and shows no evidence of past sandblasting operations or past sandblasting waste storage.

4.43.2 Operational History and Waste Characteristics

Table 4.43-2 summarizes the operational history and waste characteristics.

Table 4.43-2
AOC HIST 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 7	mid-1970s to approximately 1993	Storage of electronic equipment.	None.	None.

AOC = Area of Concern HIST = Historical No. = Number

Building 125, built in 1963, was originally located north of Building 129 and used as a ship electrical laydown shop in association with Building 129 activities (LBNSY-PW 1996). In the mid-1970s, Building 125 was moved from its original location to an area west of Building 210. The PA records search did not identify that sandblasting was performed at either of the two former locations of Building 125.

4.43.3 Preliminary Assessment Resources

Table 4.43-3 summarizes the resources used and interviews conducted in the PA evaluation.

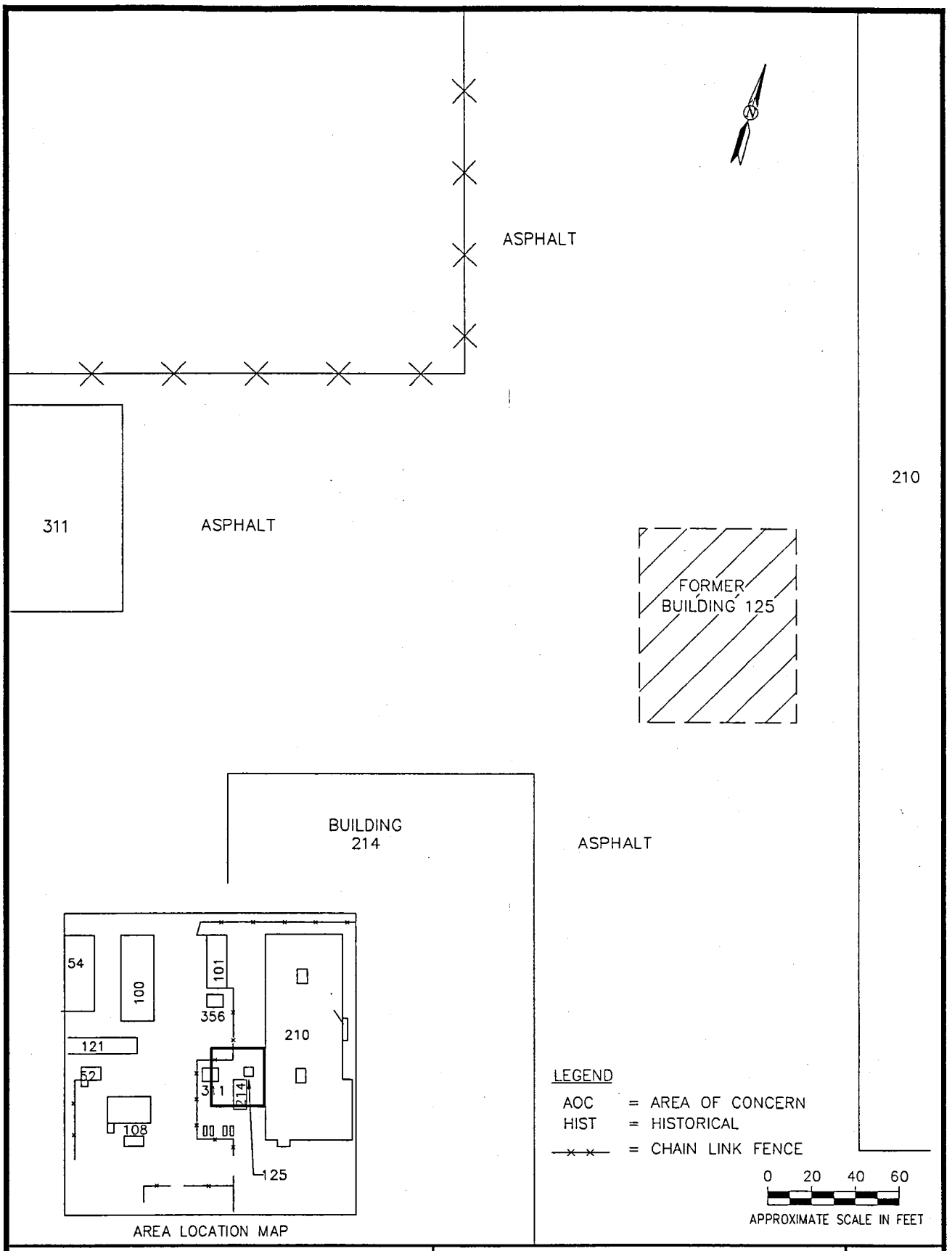
Table 4.43-3
AOC HIST 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY Drawing No. 11,999	1975	LBNSY Microfiche	Shows layouts, locations, and moving activities for Building 125.
LBNSY General Development Map	1981	LBNSY	Shows Building 125 located west of Building 210, and describes the building's use as an electronic equipment facility.
Public Works Property Record	1996	LBNSY-PW	General information regarding Building 125.
Personnel Communication	1998	Johnson, LBNSY	Provided general information concerning area west of Building 210. No sandblasting operations were conducted in the area.

AOC = Area of Concern
HIST = Historical
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.43.4 PA Recommendations

No further action is recommended for AOC HIST 7 because sandblasting did not occur at this AOC and no wastes were generated.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 7 FORMER PLATE ABRASIVE BLASTING FORMER BUILDING 125 GROUP B AREAS OF CONCERN	FIGURE 4.43-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.43-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.43-2 Concrete Foundation of Former Building 125 (AOC HIST 7) Facing North 9/22/98

4.44 CHEMICAL CLEANING AREA (AOC HIST 8)

This section presents a description of a chemical cleaning area (AOC HIST 8), its operational history and waste characteristics, PA resources used, and recommendations. Based on the preliminary assessment recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.44.1 Site Description

Table 4.44-1 summarizes the location and characteristics of AOC HIST 8. A site map is provided as Figure 4.44-1. Site photographs are shown in Figures 4.44-2 to 4.44-3.

Table 4.44-1
AOC HIST 8 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 8	Southeastern corner of Former Building 102.	E-27, E-28, F-27, F-28	A small shed used for pump and hose cleaning operations.	One small shed.	Approximately 20 feet by 30 feet by 15 feet in high.

AOC = Area of Concern HIST = Historical No. = Number

The Chemical Cleaning Area HIST 8 is identified as a former shed located outside the southeastern corner of former Building 102, southwest of Building 128 (LBNSY-ED 1996a). A 1965 map index (see Appendix E) listed this shed as temporary/portable Building Number 408367.

During the March 1998 site reconnaissance, the area was observed to be paved over with asphalt with no structural evidence of the former Building 102 or the associated former chemical cleaning shed.

4.44.2 Operational History and Waste Characteristics

Table 4.44-2 summarizes the operational history and waste characteristics.

Table 4.44-2
AOC HIST 8 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 8	Approximately 1960s to 1993	Pump and hose cleaning operations using a detergent called Mil-D-1679E.	Waste detergent used during cleaning operations.	Approximately 150 gallons of detergent waste discharged to the storm drain and/or sanitary sewer every two weeks.

AOC = Area of Concern HIST = Historical No. = Number

The EBS identified the chemical cleaning area as operating from 1975 to 1993. However, Building 102 and the chemical cleaning area were identified in the 1969 Industrial Waste Study (IWS) report prepared by Brown and Caldwell, so the exact year when chemical cleaning activities began is unknown.

AOC HIST 8 was used for pump and hose cleaning operations, using a detergent called Mil-D-1679E. Approximately 150 gallons of detergent waste were discharged to a 10-inch storm drain every two weeks (Brown and Caldwell 1969). The chemical content of the detergent Mil-D-1679E is unknown, but other cleaning solutions used at other LBNSY shops contained trisodium phosphate and sodium silicate (NEESA 1983). It is unknown whether chlorinated solvents, commonly used for cleaning purposes in the 1960s and 1970s, were used at this site. The IWS recommended that the floor drains be rerouted to an existing 8-inch sanitary sewer located between the shed and the eastern side of Building 102 (Brown and Caldwell 1969); it is unknown whether this rerouting ever occurred. No other details on the construction and operations of the chemical cleaning area were available.

4.44.3 Preliminary Assessment Resources

Table 4.44-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.44-3
AOC HIST 8 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing Number 570,404	1965	LBNSY	General Development Map shows shed location.
Drawing Number 624,211	1965	LBNSY	General Development Map Index to Structures identifies building numbers and description.
Industrial Waste Study	1969	Brown and Caldwell	Recommended waste disposal location change from the storm water system to the sanitary sewer system.
Initial Assessment Study	1983	NEESA	Information regarding the chemical composition of detergents used at LBNSY.
Environmental Baseline Survey	1996	LBNSY-ED	Location and dates of operation for cleaning area.
RI for Sites 8 through 13 at LBNSY	1997	Bechtel National, Inc.	Groundwater results in the area of former Building 102.
Technical Memorandum No. 2, for Sites 9, 12, and 13 at LBNSY.	1997	Bechtel National, Inc.	Additional groundwater results in the area of former Building 102.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
No. = Number
RI = Remedial Investigation

As part of the RI for Sites 9, 12, and 13 at LBNSY, soil and groundwater samples were collected in the general area where the cleaning activities were conducted (BNI 1997a). Two soil samples (SB-N1-25 and at depths of 2 and 6 feet bgs) were collected within this area as part of the Supplemental Groundwater Investigation (SGI), and results indicated methylene chloride was the only VOC detected (BNI 1999). Results from the RI and SGI indicate that a groundwater sample in the former chemical cleaning area had a TCE concentration of 0.0007 mg/L, a 1,2-dichloroethylene (DCE) concentration of 0.0088 mg/L, a vinyl chloride (VC) concentration of 0.0004 mg/L, and a PCE concentration of 0.0005 mg/L. The northwestern border of the VOC plume identified in the RI for Site 9 and in the SGI is located where the chemical cleaning activities occurred (BNI 1997b, 1999). Groundwater flow direction in the shallow groundwater below the former cleaning area is generally to the east and southeast (BNI 1999).

4.44.4 PA Recommendations

Further action was recommended for AOC HIST 8 because of the lack of details regarding the types and volumes of chemical cleaning solvents used at this AOC; soil and groundwater sampling was recommended to assess potential contamination from AOC HIST 8. Because detergents and possibly solvents were used at the chemical cleaning area, VOCs were the main contaminants of concern; however, SVOCs including PAHs, metals, PCBs, TPH, and pH are

also potential contaminants and were recommended for analysis in Work Plan Addendum Number 2 (CDM Federal 1999).

4.44.5 Number of Samples and Analyses

Three soil and three groundwater samples were collected on 25 February 1999 and analyzed for the analytical categories listed in Table 4.44-4.

Table 4.44-4
AOC HIST 8 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Diesel	TPH-Motor Oil	PCBs	pH
Soil	3	3	3	3	3	3	3
Groundwater	3	3	3 [(a)]	3	3	3	3

Notes:

(a) Dissolved metals.

AOC = Area of Concern
HIST = Historical
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.44.6 Analytical Results

Sample results are summarized in Tables 4.44-5 and 4.44-6, in Figure 4.44-4, and in the text below for soil and groundwater samples.

4.44.6.1 Soil

No VOCs or SVOCs were detected in the soil samples collected from AOC HIST 8. TPH-diesel was detected in all three samples at concentrations of 5J, 17, and 5J mg/kg. TPH-motor oil was detected in all three samples at concentrations of 63J, 140, and 80 mg/kg. PCBs were detected in one sample, 99SY-HI8a-S-1, at a concentration of 0.014J mg/kg. Thirteen of 17 metals were detected in the soil samples. The pH values ranged from 7.89 to 8.59.

4.44.6.2 Groundwater

The VOC TCE was detected in two of the three groundwater samples, at concentrations of 0.006 and 0.007 mg/L. The SVOC butyl benzyl phthalate was detected in sample 99SY-HI8c-W-11.4 at a concentration of 0.007J mg/L. TPH-diesel was detected in all three samples at concentrations of 0.2J, 0.1J, and 0.09J mg/L. TPH-motor oil and PCBs were not detected. The pH for groundwater sample 99SY-HI8a-W-11.4 was 5.44, while the other two groundwater sample results were 7.20 and 7.24. Eight of 17 metals were detected in the samples.

Methyl tertiary butyl ether (MTBE) was detected in all three groundwater samples, at concentrations ranging from 0.115 to 0.358 mg/L. MTBE has previously been identified in groundwater to the west and southwest of the Chemical Cleaning Area and is currently being investigated as part of a separate contract. The scope of that separate contract focuses on MTBE in groundwater from Shipyard Gasoline Station (source area), located approximately 700 feet northwest of the Chemical Cleaning Area, on the western side of Building 210.

Static water table measurements were collected from temporary piezometers installed at each of the three groundwater sampling locations. Each temporary piezometer consisted of open-ended lengths of 1½-inch outer diameter PVC, with slotted screen sections placed below the estimated water table depth of 11 feet bgs. Each temporary piezometer was left in place overnight to better enable measurement of static water levels. The measured water table was encountered at depths of 11.4, 10.1, and 11.4 feet bgs at sampling locations HI8a, HI8b, and HI8c, respectively. Water table elevations were calculated based on ground surface elevations referenced to the local MLLW datum. Water table elevations were –9.23, -9.15, and –9.14 feet MLLW at the three sampling locations. The maximum difference of the three water table elevations (0.09 feet) was less than the accuracy of the depth to groundwater measurements (measured to the nearest 0.1 feet), so a hydraulic gradient is not possible to accurately calculate at this site. The sampling locations were too close to each other to allow an accurate hydraulic gradient to be calculated.

4.44.7 Data Comparison to Screening Criteria

For the soil samples, there were no detections of VOCs or SVOCs; TPH-diesel, TPH-motor oil, PCBs, and metals were detected but did not exceed screening criteria. For the groundwater samples, there were no detections above the screening criteria for SVOCs, TPH-diesel, TPH-motor oil, and PCBs, or metals.

The detections of MTBE in the three groundwater samples (0.115 to 0.358 mg/L) exceeded the screening criteria of 0.035 mg/L.

One of the three groundwater samples (99SY-HI8a-W-11.4 at 5.44 pH units) had a pH result outside the screening criteria limits of 6.0 to 9.0. A review of groundwater data presented in the SGI report (BNI 1999) indicates that several groundwater samples were collected within about 150 feet of the former Chemical Cleaning Area in all four directions, and all of these groundwater pH results were within the range of 6.0 to 9.0.

4.44.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

The pH result of 5.02 for sample 99SY-HI8d-W-11.4, which was a field duplicate of sample 99SY-HI8a-W-11.4, supports the pH value of 5.44 for the latter sample that is outside the screening criteria range of 6.0 to 9.0.

TPH-gasoline results lower than approximately 0.3 mg/kg or 0.3 mg/L, as well as TPH-diesel results lower than approximately 0.15 mg/kg or 0.15 mg/L, should be used with caution because false positives may have occurred, as described in Appendix O.

Although sample 99SY-HI8a-S-1 had a PCB Aroclor 1260 concentration of 0.014 mg/kg, no PCBs were detected in its duplicate, sample 99SY-HI8d-S-1.

4.44.9 Recommendations

No further action is recommended for AOC HIST 8 under the AOC Investigation because the MTBE detected in groundwater beneath the Chemical Cleaning Area is being investigated as part of an investigation at the Shipyard Gasoline Station, which is the suspected source of MTBE. In addition, the groundwater sample whose pH value was 5.44 was surrounded by groundwater with pH values within the range of 6.0 to 9.0 (BNI 1999), so the area of low pH is isolated and no further action is recommended.

Table 4.44-5
AOC HIST 8 Sampling Results Summary for Organic Compounds
February 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Trichloroethene (TCE)	3	0	ND	6.1	0	3	2	0.006, 0.007	0.027	0
Methyl Tertiary Butyl Ether (MTBE)	3	0	ND	NA	0	3	1	**0.358, 0.253, 0.115**	0.002[d]	3
SVOCs (64 analytes)[c]										
Butyl Benzyl Phthalate	3	0	ND	930 [e]	0	3	1	0.007J	7.3[d]	0
TPH-Diesel	3	3	5J, 17, 5J	10,000 [e]	0	3	3	0.2J, 0.1J, 0.09J	NA	0
TPH-Motor oil	3	3	63J, 140, 80	50,000 [e]	0	3	0	ND	25	0
PCBs[c]										
Aroclor 1260	3	1	0.014J	1.3	0	3	0	ND	1.9×10^{-5}	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(e) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.44-6
AOC HIST 8 Sampling Results Summary for Metals and pH
February 1999

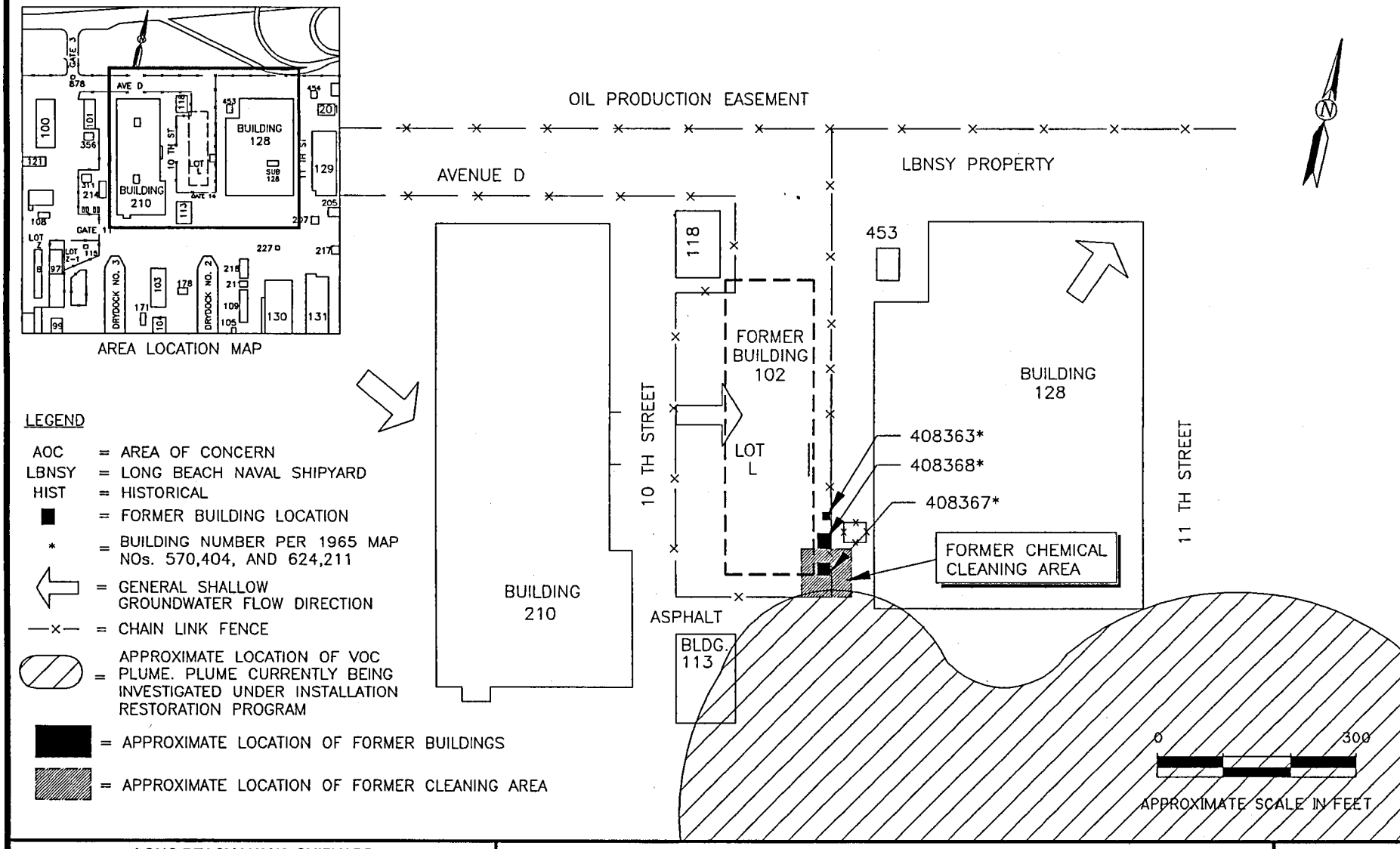
SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	3	2	1.3J, 0.12	750	11.3	0
Arsenic	3	3	2.1, 3.1, 3.8	3.0	17.5	0
Barium	3	3	118, 95.7, 100	100,000	275	0
Beryllium	3	0	ND	3,400	1.4	0
Cadmium	3	0	ND	930	1.7	0
Chromium	3	3	61.6J, 14.2, 14.5	450	60.9	0
Cobalt	3	3	28.0J, 9.3, 9.4	29,000	24.5	0
Copper	3	3	50.4J, 12.4, 11.4	70,000	798.7	0
Lead	3	3	5.7J, 6.5, 24.0	1000	185.2	0
Mercury	3	3	0.046J, 0.25, 0.056	560	2.5	0
Molybdenum	3	2	0.49, 0.49	9,400	NA	0
Nickel	3	3	70.9J, 13.0, 10.2	37,000	32.6	0
Selenium	3	0	ND	9,400	1.4	0
Silver	3	1	0.043	9,400	1.5	0
Thallium	3	0	ND	150	4.2	0
Vanadium	3	3	75.8J, 26.1, 29.2	13,000	84.9	0
Zinc	3	3	69.5J, 43.3, 62.2	100,000	844.9	0
pH	3	3	7.89, 7.89, 8.59	NA	NA	0
GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[c][b] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Industrial PRG and Background**
Antimony	3	0	ND	1.2	0.0616	0
Arsenic	3	3	45.6, 3.4, 12.7	0.008	0.0276	0
Barium	3	3	73.6, 168, 145	1[d]	0.1777	0
Beryllium	3	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	3	0	ND	0.001	0.0017	0
Chromium	3	3	4.3J, 6.0, 5.4	190	0.0029	0
Cobalt	3	3	0.94J, 0.50, 0.35	2.2[d]	0.0071	0
Copper	3	0	ND	0.003	0.1072	0
Lead	3	0	ND	0.002	0.028	0
Mercury	3	3	0.20, 0.12, 0.13	$4.0x10^{-5}$	0.0009	0
Molybdenum	3	3	6.6, 10, 8.8	0.18[d]	NA	0
Nickel	3	3	5.0J, 4.6, 4.5	0.005	0.0958	0
Selenium	3	0	ND	0.015	0.040	0
Silver	3	0	ND	0.0007	0.0072	0
Thallium	3	0	ND	0.014	0.0075	0
Vanadium	3	0	ND	0.26[d]	0.0107	0
Zinc	3	3	4.4J, 4.7, 3.7	0.020	0.291	0
pH	3	3	5.44, 7.20, 7.24	6.0 to 9.0	NA	1

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.44-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC HIST 8
CHEMICAL CLEANING AREA

GROUP B AREAS OF CONCERN

FIGURE
4.44-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.44-9

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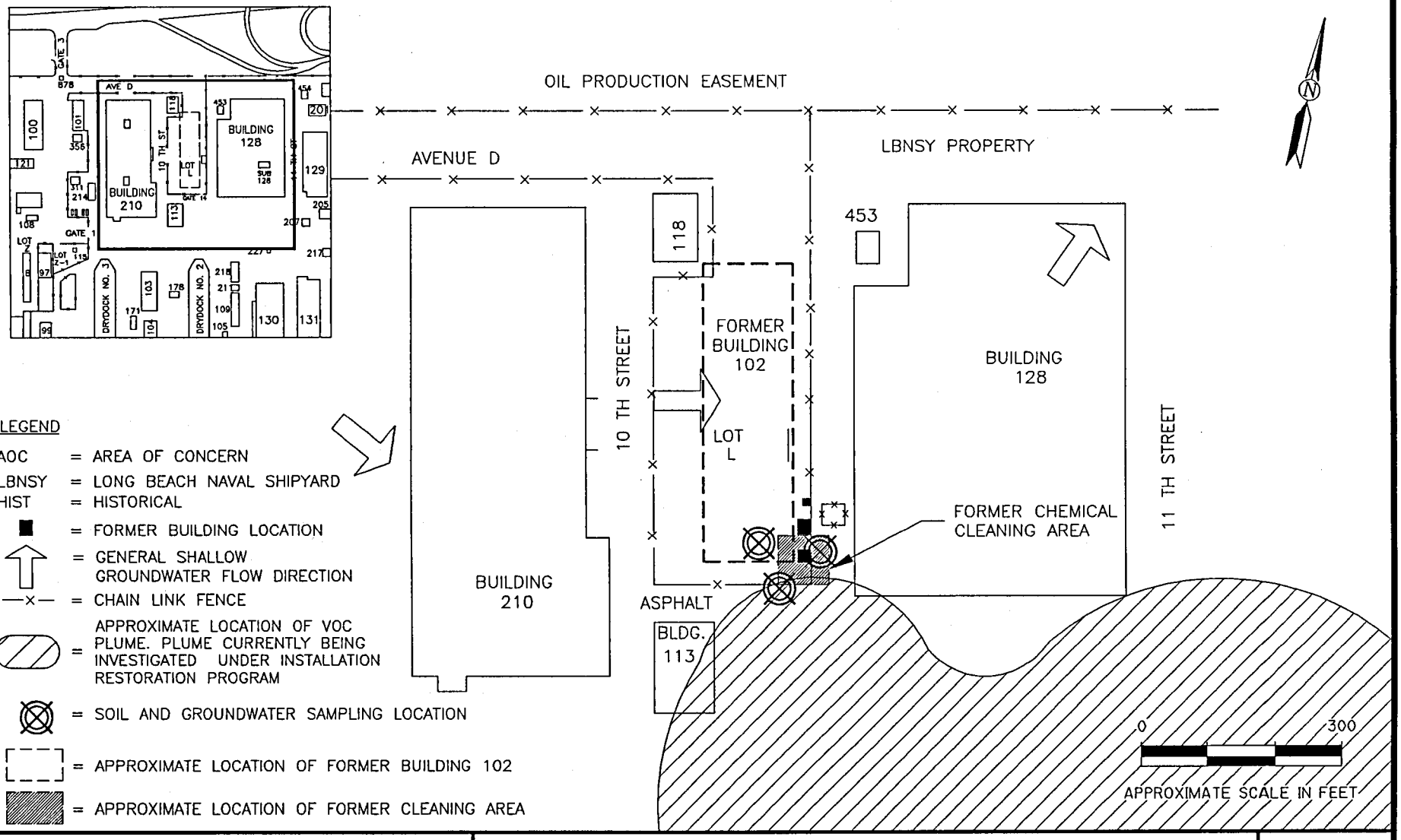
Figure 4.44-2 Former Chemical Cleaning Area (AOC HIST 8) Facing North 9/22/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC HIST 8 SAMPLING LOCATIONS CHEMICAL CLEANING AREA GROUP B AREAS OF CONCERN	FIGURE 4.44-3
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.44-3 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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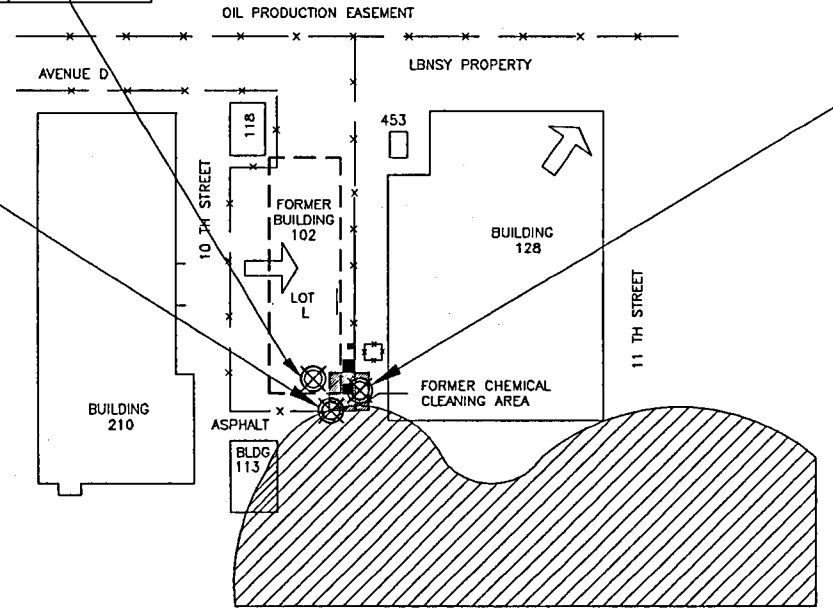
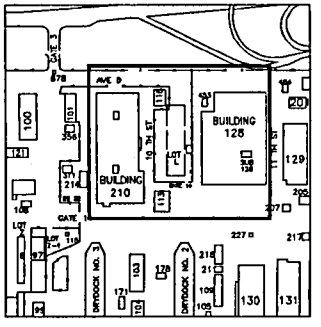
99SY-HI8c-S-1	
ANALYTE	CONC. (mg/kg)
TPH-DIESEL	5J
TPH-MOTOR OIL	80
pH	8.59 pH UNITS
99SY-HI8c-W-11.4	
ANALYTE	CONC. (mg/L)
TRICHLOROETHENE	0.007J
TPH-DIESEL	0.9J
MTBE	0.115
BUTYLBENZYLPHTHALATE	0.007J
pH	7.24 pH UNITS

99SY-HI8c-S-1 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 1 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
= OUTSIDE PH SCREENING CRITERIA OF 6.0 TO 9.0 OR ABOVE MTBE SCREENING CRITERIA OF 0.035 mg/L

99SY-HI8a-S-1	
ANALYTE	CONC. (mg/kg)
TPH-DIESEL	5J
TPH-MOTOR OIL	63J
PCB AROCLOR 1260	0.014J
pH	7.89 pH UNITS
99SY-HI8a-W-11.4	
ANALYTE	CONC. (mg/L)
MTBE	0.358
TPH-DIESEL	0.2J
pH	5.44 pH UNITS

99SY-H18b-S-1	
ANALYTE	CONC. (mg/kg)
TPH-DIESEL	17
TPH-MOTOR OIL	140
pH	7.89 pH UNITS
99SY-HI8b-W-10.1	
ANALYTE	CONC. (mg/L)
TRICHLOROETHENE	0.006J
TPH-DIESEL	0.1J
MTBE	0.253
pH	7.20 pH UNITS





LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
HIST = HISTORICAL
MTBE = METHYL TERTIARY BUTYL ETHER
TPH = TOTAL PETROLEUM HYDROCARBONS
PCB = POLYCHLORINATED BIPHENYL
CONC. = CONCENTRATION
J = ESTIMATED CONCENTRATION
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
—x— = CHAIN LINK FENCE
= APPROXIMATE LOCATION OF VOC PLUME. PLUME CURRENTLY BEING INVESTIGATED UNDER INSTALLATION RESTORATION PROGRAM
= SOIL AND GROUNDWATER SAMPLING LOCATION

= FORMER BUILDING LOCATIONS
= APPROXIMATE LOCATION OF FORMER BUILDING 102
= APPROXIMATE LOCATION OF FORMER CLEANING AREA

NOTES: THIS FIGURE SHOWS ALL ORGANIC DETECTIONS AND PH RESULTS. NO METALS EXCEEDED SCREENING CRITERIA.

0 300
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.44-4
MODIFIED BY: L. Brown
PROJECT NO. 6210-014

AOC HIST 8
SAMPLING RESULTS SUMMARY, FEBRUARY 1999
CHEMICAL CLEANING AREA
GROUP B AREAS OF CONCERN

FIGURE
4.44-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.44-13

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4.45 STORAGE AREA FOR SCRAP METAL AND OILS (AOC HIST 9)

This section presents a description of the storage area for scrap metal and oils (AOC HIST 9), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.45.1 Site Description

Table 4.45-1 summarizes the location and characteristics of AOC HIST 9. A site map is provided as Figure 4.45-1 and site photographs are shown in Figures 4.45-2 and 4.45-3.

Table 4.45-1
AOC HIST 9 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
HIST 9	Outside southwestern corner of Building 132	J-31	Storage area for scrap metal, and potentially some metal cutting operations and oil storage.	Several bins used to contain scrap metal.	Approximately 90 feet by 50 feet.

AOC = Area of Concern HIST = Historical No. = Number

During the March 1998 site reconnaissance, AOC HIST 9 was observed to be paved with asphalt that was in good condition with no signs of scrap metal, oil, or other staining. A sign on the wall of Building 132 indicated that scrap metal bins had been located there. The scrap metal storage area was located outside of the southwestern side of Building 132 and was likely no larger than 90 feet by 50 feet.

4.45.2 Operational History and Waste Characteristics

Table 4.45-2 summarizes the operational history and waste characteristics.

Table 4.45-2
AOC HIST 9 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
HIST 9	1970 to 1975	Storage area for scrap metal, and potentially some metal cutting operations and oil storage.	Scrap metal, and potentially oil.	Unknown.

AOC = Area of Concern HIST = Historical No. = Number

The former storage area referred to as AOC HIST 9 was primarily used to store a variety of metal stock. Several bins of scrap metal existed in the area from 1970 to 1975 (LBNSY-ED 1996a). Metal cuttings from lathes, drill presses, and other machinery were stored in numerous bins in this area (Rollefson, pers. comm. 1999). These bins were segregated by metal type (e.g., brass, aluminum, steel). Two aerial photographs taken in 1970 do not appear to show metal storage activities in this area.

According to the EBS, there were unconfirmed reports of oil storage in the area (LBNSY-ED 1996a). More likely, the oil referred to in the EBS may have been the cutting oils that existed on the metal cuttings (Rollefson, pers. comm. 1999).

4.45.3 Preliminary Assessment Resources

Table 4.45-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.45-3
AOC HIST 9 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY Photographs	1966, 1970, unspecified date in 1980s	LBNSY information repository	Aerial photographs that do not appear to show a metal storage area in the southwestern area of Building 132.
Environmental Baseline Survey	1996	LBNSY-ED	Location and dates of operation for storage area.
Personnel Interview	1998	Johnson, LBNSY	Provided information on previous activities at storage area.
Personnel Interview	1999	Rollefson, SWDIV	Provided information on previous activities at storage area.

AOC = Area of Concern
HIST = Historical
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
SWDIV = Southwest Division Naval Facilities Engineering Command

4.45.4 PA Recommendations

Further action was recommended for AOC HIST 9 because of the lack of information concerning the storage area and the potential for oil storage and associated spills. Soil and groundwater samples were recommended for collection in the vicinity of the southwestern corner of Building 132 (CDM Federal 1999). The contaminants of concern for the storage area include metals, TPH, SVOCs including PAHs, VOCs, and PCBs.

4.45.5 Number of Samples and Analyses

Two soil and two groundwater samples were collected on 5 March 1999. Sampling locations are indicated in Figure 4.45-4.

Table 4.45-4
AOC HIST 9 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Diesel	TPH-Motor Oil	PCBs
Soil	2	2	2	2	2	2
Groundwater	2	2	2 [(a)]	2	2	2

Notes:

(a) Dissolved metals.

AOC = Area of Concern
HIST = Historical
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.45.6 Analytical Results

Sample results are summarized in Tables 4.45-5 and 4.45-6, in Figure 4.45-5, and in the text below for soil and groundwater samples.

4.45.6.1 Soil

No VOCs, SVOCs, or PCBs were detected in the soil samples collected at AOC HIST 9. TPH-diesel and TPH-motor oil were detected in sample 99SY-HI9a-S-1 at concentrations of 2J mg/kg and 14 mg/kg, respectively. TPH-diesel was detected in sample 99SY-HI9b-S-1 at a concentration of 2J mg/kg. Twelve of the 17 metals were detected in the soil samples collected at AOC HIST 9.

4.45.6.2 Groundwater

No VOCs, TPH-diesel, TPH-motor oil, or PCBs were detected in the groundwater samples collected at AOC HIST 9. The SVOC BEHP was detected in sample 99SY-HI9a-W-5 at a concentration of 0.001J mg/kg. Two of the 17 metals were detected in the groundwater sample collected at AOC HIST 9.

4.45.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria in the soil and groundwater samples.

4.45.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.45.9 Recommendation

No further action is recommended for the Storage Area for Scrap Metal and Oil (AOC HIST 9) because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.45-5
AOC HIST 9 Sampling Results Summary for Organic Compounds
March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)	2	0	ND	NA	0	2	0	ND	NA	0
SVOCs (64 analytes)[c]										
Bis-(2-ethylhexyl)phthalate	2	0	ND	210	0	2	1	0.001J	0.0035	0
TPH-Diesel	2	1	2J	10,000[d]	0	2	0	ND	NA	0
TPH-Motor oil	2	2	14, 2J	50,000[d]	0	2	0	ND	25	0
PCBs	2	0	ND	1.3	0	2	0	ND	$1.9x10^{-5}$	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.45-6
AOC HIST 9 Sampling Results Summary for Metals
March 1999

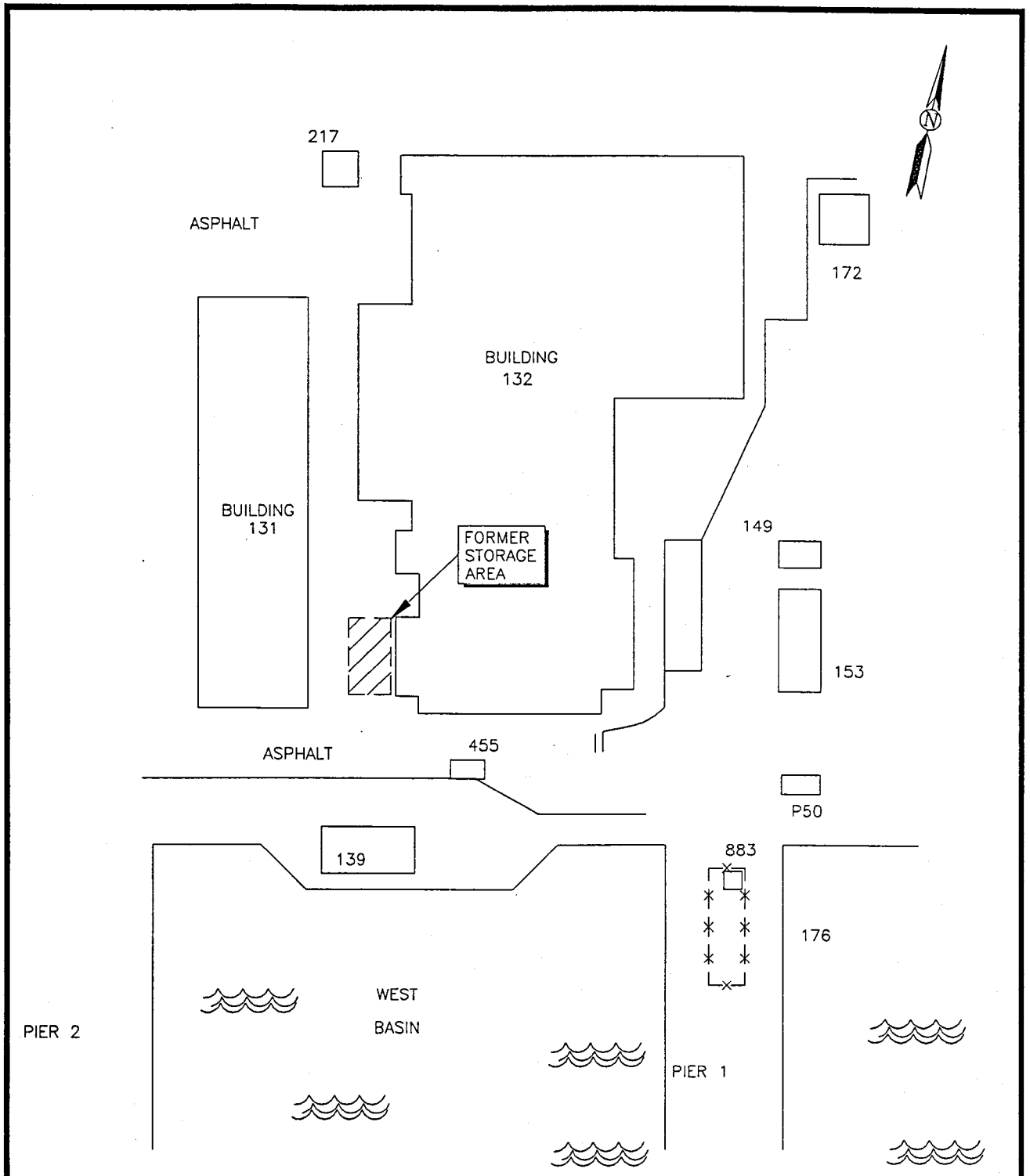
SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	1	0.99	750	11.3	0
Arsenic	2	2	0.91J, 3.7J	3.0	17.5	0
Barium	2	2	617J, 80.6J	100,000	275	0
Beryllium	2	0	ND	3,400	1.4	0
Cadmium	2	1	0.17J	930	1.7	0
Chromium	2	2	13.2, 22.6	450	60.9	0
Cobalt	2	2	25.1, 9.0	29,000	24.5	0
Copper	2	2	41.8, 12.6	70,000	798.7	0
Lead	2	2	1.4, 3.3J	1000	185.2	0
Mercury	2	1	0.10	560	2.5	0
Molybdenum	2	0	ND	9,400	NA	0
Nickel	2	2	59.4, 14.3J	37,000	32.6	0
Selenium	2	0	ND	9,400	1.4	0
Silver	2	0	ND	9,400	1.5	0
Thallium	2	0	ND	150	4.2	0
Vanadium	2	2	25.7, 31.7	13,000	84.9	0
Zinc	2	2	57.7, 50.0	100,000	844.9	0

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Screening Criteria for Water[b] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	0	ND	1.2	0.0616	0
Arsenic	2	0	ND	0.008	0.0276	0
Barium	2	2	0.0543J, 0.101J	1[d]	0.1777	0
Beryllium	2	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	2	0	ND	0.001	0.0017	0
Chromium	2	0	ND	190	0.0029	0
Cobalt	2	0	ND	2.2[d]	0.0071	0
Copper	2	0	ND	0.003	0.1072	0
Lead	2	0	ND	0.002	0.028	0
Mercury	2	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	2	0	ND	0.18[d]	NA	0
Nickel	2	0	ND	0.005	0.0958	0
Selenium	2	2	0.0065, 0.0068	0.015	0.040	0
Silver	2	0	ND	0.0007	0.0072	0
Thallium	2	0	ND	0.014	0.0075	0
Vanadium	2	0	ND	0.26[d]	0.0107	0
Zinc	2	0	ND	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
HIST = Historical
J = Estimated Concentration
mg/L = Milligrams Per Liter
mg/kg = Milligrams Per Kilogram
NA = Not available
N/A = Not applicable
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 9 STORAGE AREA - SCRAP METAL AND OILS	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.45-1		4.45-1
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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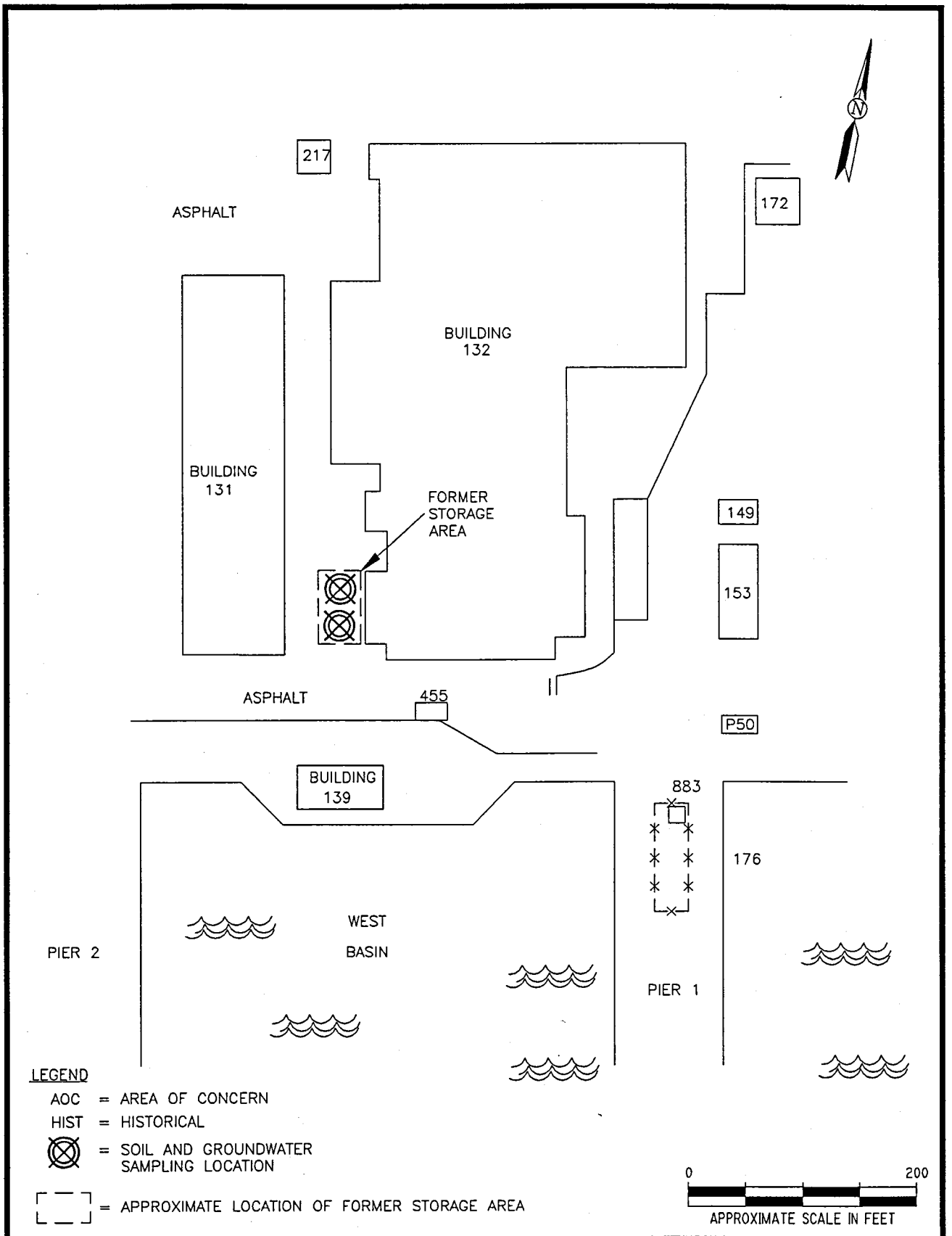
Figure 4.45-2 Storage Area for Scrap Metal and Oils (AOC HIST 9) Facing North 2/10/98

Figure 4.45-3 Storage Area for Scrap Metal and Oils (AOC HIST 9) Facing East 2/10/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC HIST 9 SAMPLING LOCATIONS STORAGE AREA FOR SCRAP METAL AND OILS GROUP B AREAS OF CONCERN	FIGURE 4.45-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.45-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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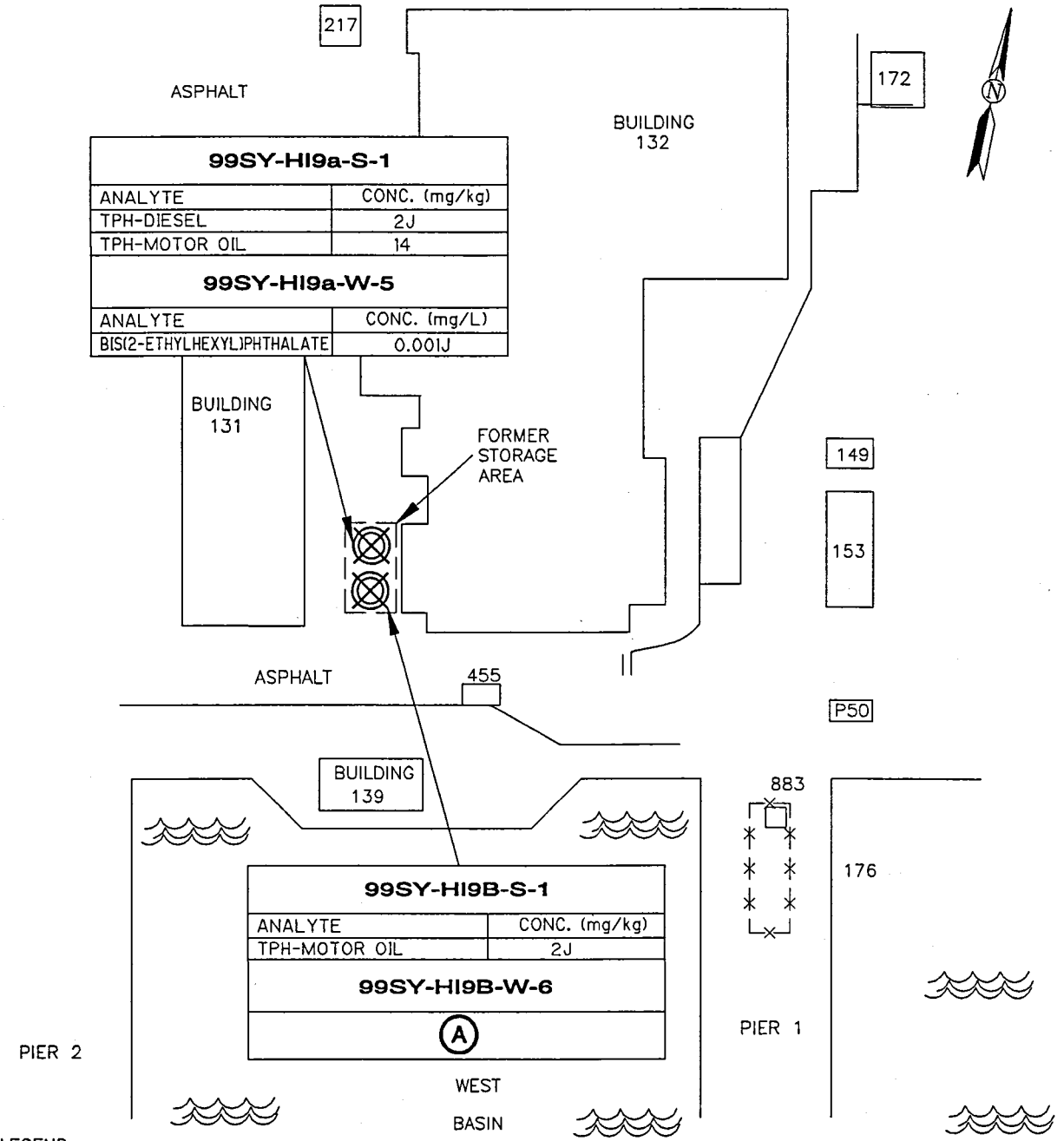

LEGEND

AOC = AREA OF CONCERN
BEHP = BIS(2-ETHYLHEXYL)PHTHALATE
HIST = HISTORICAL
= SOIL AND GROUNDWATER SAMPLING LOCATIONS
= APPROXIMATE LOCATION OF FORMER STORAGE AREA

99SY-HI9a-S-1=SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 1 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION
(A) = NO ORGANICS DETECTED, AND NO METALS ABOVE SCREENING CRITERIA.

NOTE: THIS FIGURE SHOWS ORGANIC COMPOUNDS DETECTED. NO METALS CONCENTRATIONS EXCEEDED SCREENING CRITERIA.

0 200
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING RESULTS SUMMARY, MARCH 1999 AOC HIST 9 STORAGE AREA - SCRAP METAL AND OILS	FIGURE 4.45-5
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.45-5	GROUP B AREAS OF CONCERN	
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.46 INDUSTRIAL WASTEWATER PIPELINES SYSTEM (AOC IWS 1)

A description of Industrial Wastewater Pipelines System (AOC IWS 1), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.46.1 to 4.46.4.

4.46.1 Site Description

Table 4.46-1 summarizes the location and characteristics of AOC IWS 1. These locations of these pipelines are indicated in Figure 4.46-1. Photographs of some of the aboveground portion of AOC IWS 1 are shown in Figures 4.46-2 through 4.46-4.

Table 4.46-1
AOC IWS 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 1	Subsurface from Buildings 210 and 132 to IWTP.	Various (C- to J -21 to -34). See Figure 4.46-1 for details.	Subsurface and above ground pipelines that carry liquid industrial waste to the IWTP.	PVC pipelines connecting industrial waste discharge sources to the IWTP.	Pipeline diameter ranging in size from 4 to 6 inches. Approximately 3,000 linear feet of pipelines.

AOC = Area of Concern
HWF = Hazardous Waste Facility
IWS = Industrial Wastewater System
IWTP = Industrial Wastewater Treatment Plant
No. = Number
PVC = Polyvinyl chloride

AOC IWS 1 consists of subsurface and aboveground pipelines used to transfer liquid industrial waste (LIW) to the Industrial Waste Treatment Plant (IWTP). The pipelines are approximately 4 inches in diameter, made of PVC, and were originally built to transfer wastes from Buildings 132, 205, and 210, as well as two sets of drydock LIW storage tanks to the IWTP located at Building 108. The majority of the pipelines are below ground. The aboveground portions include those at Building 132 and east of Building 132 (see Figures 4.46-2 and 4.46-3), and at each source area (Building 210, each set of LIW tanks). During the March 1998 site reconnaissance, these pipes were in place but not in use. These pipes were labeled PCW (phenol/cyanide wastes), CRW (chromate waste), and MW (miscellaneous waste).

The pipelines were connected to sources that generated liquid waste that could be treated by the IWTP. The Building 132 second floor plating shop (see Section 4.69) was connected to the pipelines (see Figure 4.46-1) in order to treat waste plating solutions and wastewater. In a similar manner, the pipelines were attached to the Building 210 plating shop (see Section 4.65) as indicated in Figures 4.46-1 and 4.46-4. The IWTP lines were also connected to the drydock LIW storage tanks (one set located between Drydocks 2 and 3, and one set at Drydock 1; see Section 4.49 and Figure 4.46-1) for treating wastewater generated in the drydocks.

4.46.2 Operational History and Waste Characteristics

Table 4.46-2 summarizes the operational history and waste characteristics of AOC IWS 1.

Table 4.46-2
AOC IWS 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 1	1986 to 1997	Transfer of industrial waste from facilities to IWTP.	Heavy metals, dissolved sulfides, nitrates, cyanide, oil and grease, and hexavalent chromium.	Unknown. IWTP design capacity of 600,000 gallons/month.

AOC = Area of Concern IWTP = Industrial Wastewater Treatment Plant No. = Number

The IWTP pipelines were used for 11 years, but only for certain areas at LBNSY. According to the IWTP Control & Management Plan and other sources, the connection to Building 205 was not completed (Kennedy/Jenks 1993 and Johnson, pers. comm. 1998) and the connection to the valve cleaning facility and Pipe and Copper Shop at Building 132 was never used (Kennedy/Jenks Consultants 1993).

Wastewater generated at the drydocks was collected at the LIW tanks and analyzed to determine if discharge to the IWTP was necessary. If low levels of analytes were detected, the liquid was discharged to the sanitary sewer (Sachse, pers. comm. 1998). Approximately 90 percent of the wastewater from the LIW tanks was reportedly discharged to the sanitary sewer (Johnson, pers. comm. 1998).

There were no reported spills associated with the pipelines according to the LBNSY spill log; however, a leak reportedly occurred where the PVC pipe attaches to the IWTP Number 3 processing tank at the IWTP (NDE Environmental & Harding Lawson Associates 1993). This leak was discovered as part of an inspection of the IWTP and was probably fixed immediately. However, no information is available on the details of the leak. LBNSY personnel indicated that an additional subsurface pipeline leak was discovered in 1993 approximately 100 feet west of Drydock 1 (Johnson, pers. comm. 1998). The leak was discovered coincidentally during excavation work in the area. The leak was repaired, but the volume and duration are unknown.

Sodium hydroxide has reportedly crystallized in portions of the pipelines (Baer, pers. comm. 1998).

4.46.3 Preliminary Assessment Resources

Table 4.46-3 presents the PA resources used and interviews conducted to evaluate AOC IWS 1.

Table 4.46-3
AOC IWS 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
IWTP Control & Management Plan	1993	Kennedy/Jenks Consultants	Described building connections; recommended modifications.
Industrial Wastewater and IWTP Control & Management Plan, Volume II	1993	Kennedy/Jenks Consultants	Includes Inspection Plan, Waste Analysis Plan, Training Plan, Spill Prevention & Contingency Plan.
Test Report & Certification, Precision Tank Testing	1993	NDE Environmental & HLA	PVC pipe and attached to number 3 processing tank was found to be leaking.
IWTP Preventative Maintenance Program (35%)	1994	Life Cycle Engineering & HLA	Maintenance plans and sampling procedures.
Certified Volumetric Tank Test and Hydrostatic Line Test	1995	NDE Environmental & HLA	Test results for sumps and lines at Building 210 and lines from Drydocks 1 and 2. All passed except for results from Wastewater Line West which were never finalized.
IWTP Closure Plan	1996	BRASH Industries	Plan for closure of IWTP including pipelines. Included soil samples, wipe samples, and rinsate samples.
Personnel Interview	1998	Nunn, LBNSY	Tour of facility; described process and equipment.
Personnel Interview	1998	DiDomenico, LBNSY and Sachse, BRASH	Closing through contract with BRASH. Conducting sampling. Report to be submitted to DTSC.
Personnel Interview	1998	Johnson, LBNSY	General information concerning operation of IWTP pipelines and associated connections.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
HLA = Harding Lawson Associates
HW = Hazardous Waste
IWS = Industrial Wastewater System
IWTP = Industrial Waste Treatment Plant
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
No. = Number
PVC = Polyvinyl Chloride

4.46.4 PA Recommendations

No further action is recommended for AOC IWS 1 under the AOC Investigation project; however, because of the sodium hydroxide that has crystallized in the lines, further action including closure of the pipelines is scheduled to be conducted under the Compliance Program in 1999.

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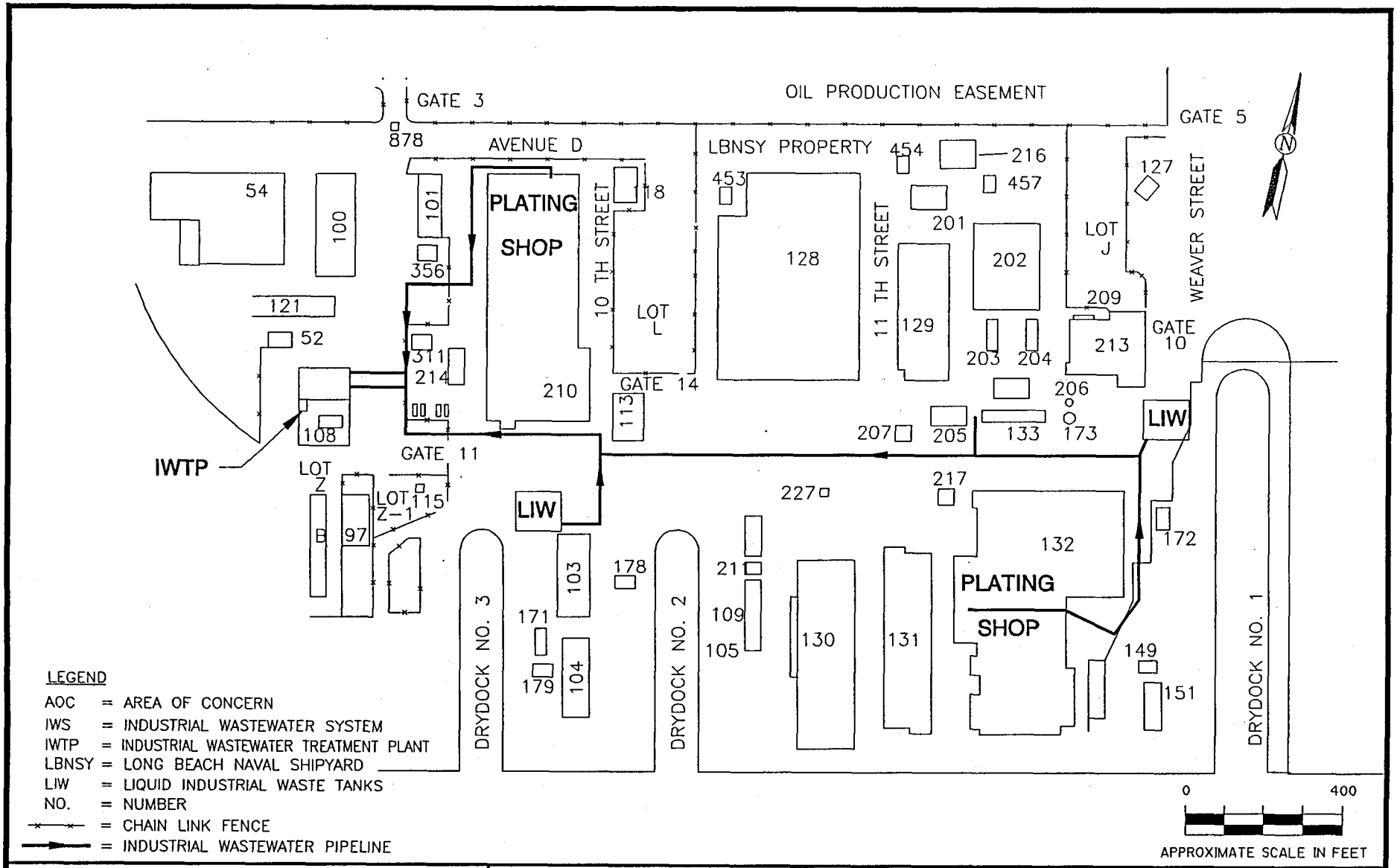

LEGEND

AOC = AREA OF CONCERN
IWS = INDUSTRIAL WASTEWATER SYSTEM
IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT
LBNSY = LONG BEACH NAVAL SHIPYARD
LIW = LIQUID INDUSTRIAL WASTE TANKS
NO. = NUMBER
= CHAIN LINK FENCE
= INDUSTRIAL WASTEWATER PIPELINE

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99
FN: 4.46-1

MODIFIED BY: J. Brown | PROJECT NO. 6210-014

AOC IWS 1
INDUSTRIAL WASTEWATER PIPELINES

GROUP B AREAS OF CONCERN

FIGURE
4.46-1

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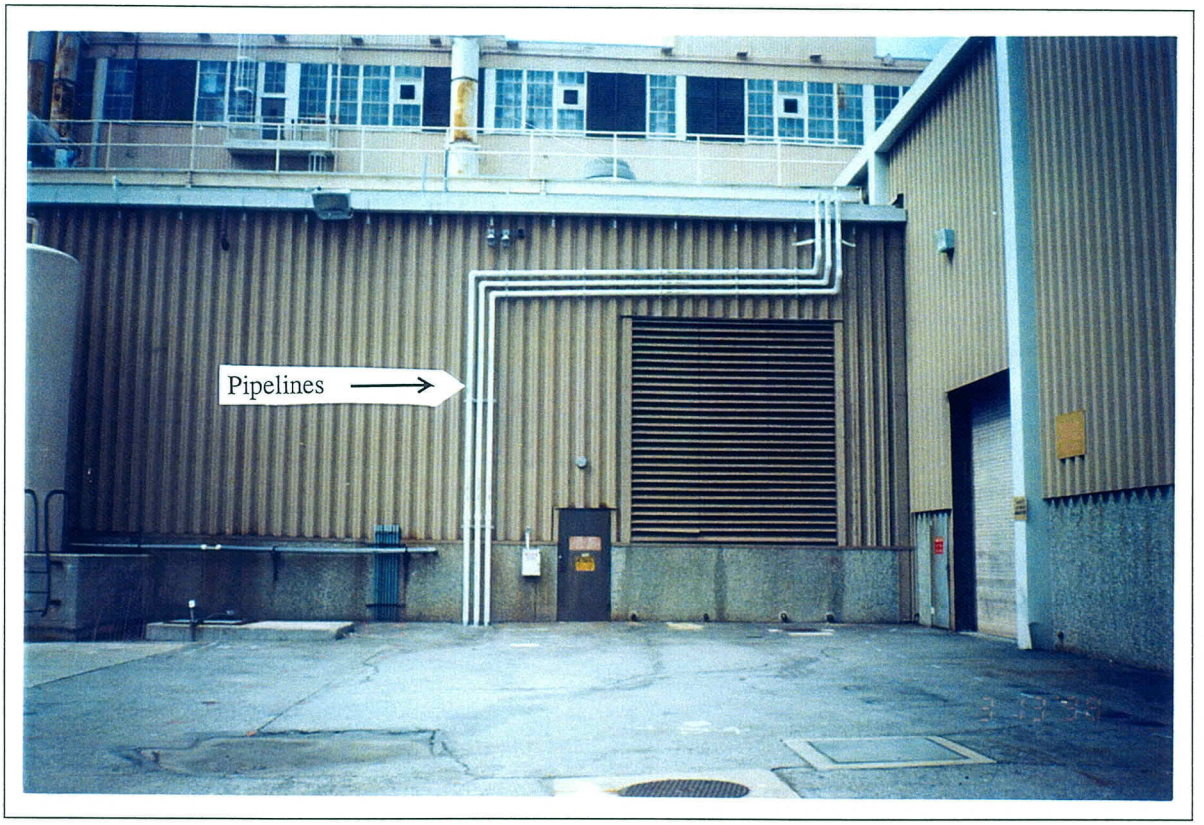

Figure 4.46-2 IWS Pipelines East of Building 132, (AOC IWS 1), Facing West 3/13/98

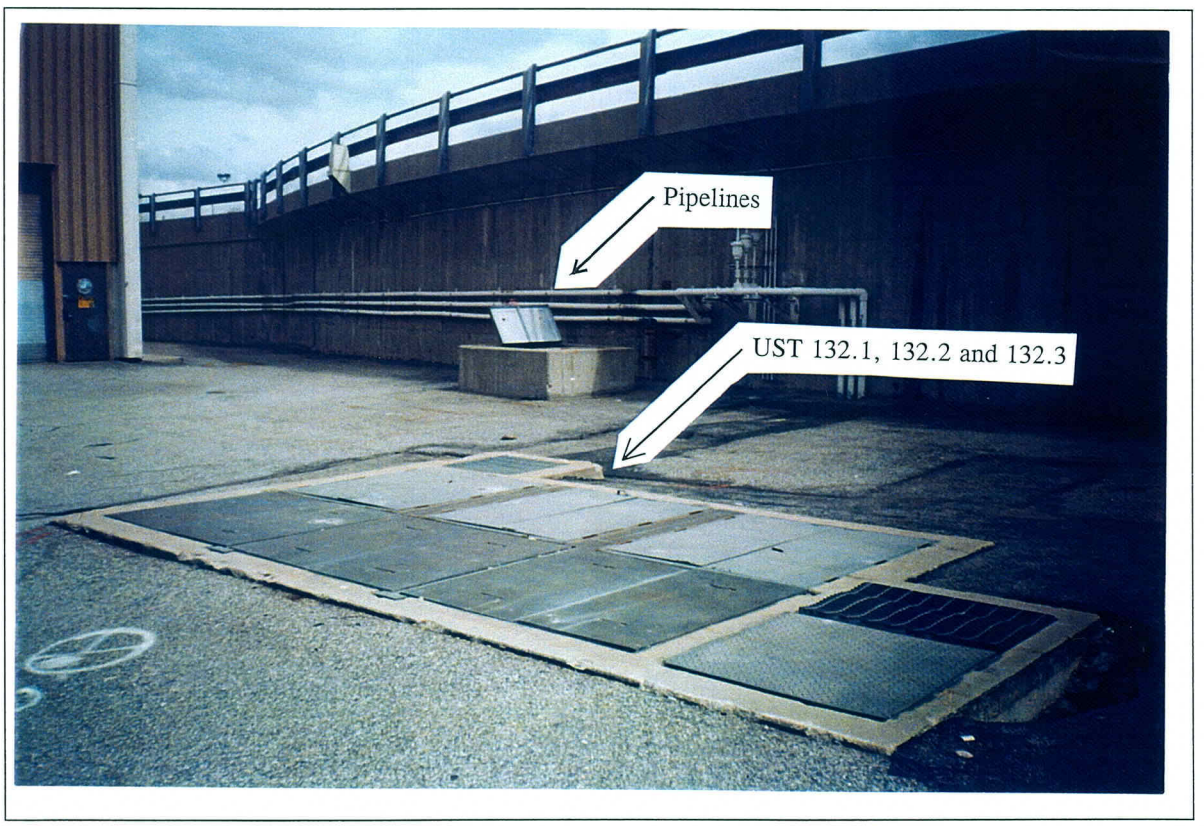

Figure 4.46-3 IWS Pipelines, Associated USTs 132.1, 132.2, and 132.3 (to be removed under the UST Compliance Program in Summer 1999) East of Building 132, (AOC IWS 1), Facing Northeast 3/12/98

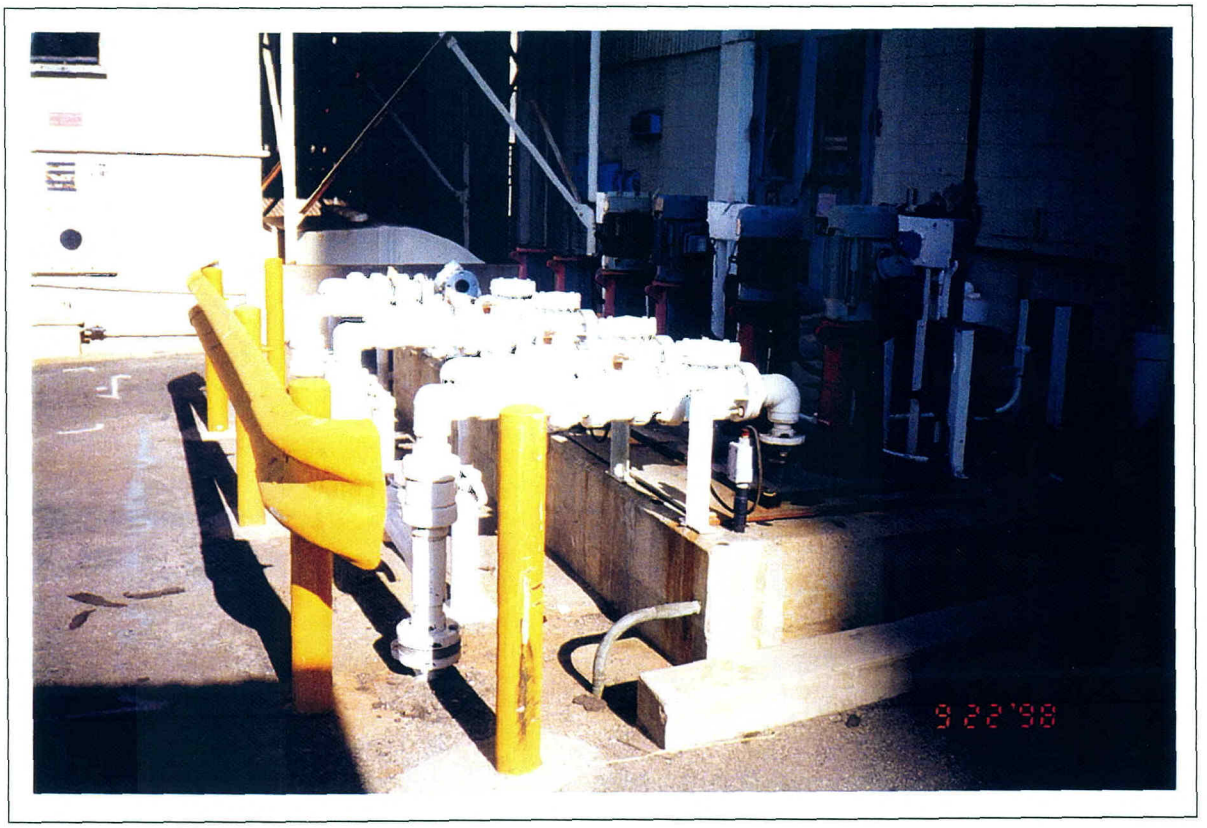

Figure 4.46-4 IWS Pipelines North of Building 210, (AOC IWS 1) (USTs 210.1, 210.2, and 210.3 to be removed under the UST Compliance Program in Summer 1999), Facing Southeast 9/22/98

4.47 INDUSTRIAL WASTEWATER TREATMENT PLANT (AOC IWS 2)

A description of the Industrial Wastewater Treatment Plant (AOC IWS 2), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.47.1 to 4.47.4.

4.47.1 Site Description

Table 4.47-1 summarizes the location and characteristics of AOC IWS 2. A site map is shown in Figure 4.47-1 and site photographs are shown in Figures 4.47-2 to 4.47-7.

Table 4.47-1
AOC IWS 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 2	Building 108 and the adjacent area north of Building 108.	F-23	System of treatment tanks and piping. Surrounding area is paved and fenced.	Building and 12 Tanks - Holding Tanks (2) - Treatment Tanks (5) - Storage Tanks (2) - Sludge Holding Tank - Dissolved Air Flotation Tank - Wet Well Tank	Tanks (capacity) 257,400-gallon (1) 120,000-gallon (3) 27,000-gallon (2) 7,400-gallon (3) 3,000-gallon (1) 1,585-gallon (1) Wet well 14,400-gallon Building 108 98 feet by 50 feet Yard Approximately 200 feet by 200 feet.

AOC = Area of Concern IWS = Industrial Wastewater System No. = Number

Building 108, located adjacent to and south of the tanks, contains a control room, a laboratory, a pH adjustment room, an electrical room with a non-PCB transformer, and a chemical-mixing room. The remainder of the IWTP consists of two holding tanks (257,400-gallons for final effluent and 7,400-gallons for miscellaneous holding); five treatment tanks (two 27,000-gallon tanks for nitrate and three 120,000-gallon tanks for sulfonation); two storage tanks (7,400-gallons for acid and 7,400-gallons for base); a 3,000-gallon sludge holding tank; a 1,585-gallon dissolved air flotation (DAF) tank; and a 14,400-gallon wet well tank (BRASH 1996). During the March 1998 site reconnaissance, these tanks were observed to be in place but no longer in use.

The IWTP at LBNSY was authorized for on site treatment by the DTSC as a Permit By Rule Facility. The IWTP has been designated as Fixed Treatment Unit (FTU) 04 under the Tiered Permitting Program at LBNSY.

4.47.2 Operational History and Waste Characteristics

Table 4.47-2 summarizes the operational history and waste characteristics of AOC IWS 2.

Table 4.47-2
AOC IWS 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 2	1990 to 1996	Transfer of industrial waste to the IWTP.	IWTP received wastewater containing heavy metals, dissolved sulfides, oil and grease, petroleum products, chromates, nitrates/nitrites, and other acids and bases.	Unknown. Design capacity of the IWTP was approximately 600,000 gallons per month.

AOC = Area of Concern
IWS = Industrial Wastewater System
No. = Number
IWTP = Industrial Waste Treatment Plant

The IWTP was constructed in 1986 and operated from 1990 until operational closure at LBNSY in 1996. The IWTP was built to pre-treat the liquid industrial waste containing heavy metals (including hexavalent chromium), oil and grease, and acids and bases before discharge to the sanitary sewer (Kennedy/Jenks 1993). The major sources of liquid waste originated from the plating shop located in Building 210 and the second floor Plating Shop in Building 132. These sources were connected to the Industrial Wastewater System Pipelines (AOC IWS 1; see Section 4.46) (BRASH 1996) that transported wastes to the IWTP. On occasion, the IWTP would receive piped-in wastewater from the drydocks as well as Bilge Oily Water Treatment System (BOWTS) wastes transported by truck (AOC IWS 3; see Section 4.48). Pipelines were later built to connect the LIW tanks (see Section 4.49), which collected wastewater from the drydocks, to the IWTP; however, wastewater from these tanks was rarely sent to the IWTP because it usually met discharge limits (Johnson, pers. comm., 1998).

Although phenol/cyanide treatment was planned for the facility, it was never implemented (BRASH 1996). The IWTP was originally built to treat wastes from Buildings 132, 205, and 210, but the connection to Building 205 was never completed. The connection to the valve cleaning area at Building 132 (see Section 4.68) was never implemented according to the IWTP Control & Management Plan (Kennedy/Jenks Consultants 1993), although LBNSY-PW maps show the connection.

The IWTP had a design capacity of approximately 600,000 gallons of wastewater per month according to the tiered permit renewal notification (LBNSY-ED 1995). The treatment processes used at the IWTP included chrome reduction, pH sulfonation, precipitation by pH adjustment, coagulation, gravity settling, use of a filter press for sludges, and filtration.

After treatment, the wastewater was analyzed to confirm that it met the industrial wastewater discharge limits. It was then released to the sanitary sewer. Dewatered sludge was sent off-site for treatment.

The IWTP operated under a National Pollutant Discharge Elimination System (NPDES) permit (number CA 0003786) issued by the LA RWQCB. On 20 June 1991, DTSC granted a one-year variance from operating permit requirements. After the variance expired, LBNSY operated under Tier III Permit by Rule (PBR) requirements (Kennedy/Jenks 1993). The IWTP was identified as FTU 04 under tiered permit number CA6170023109 (LBNSY-ED 1995). In 1995, the City of Los Angeles Department of Public Works issued a permit for discharging treated wastewater from the IWTP to the sanitary sewer system (City of Los Angeles Public Works 1995).

The LBNSY spill log (Appendix B) did not list any spills at Building 108. However, LBNSY personnel reported that tank liners continually failed during use (Johnson, pers. comm., 1998). Wastes that leaked were contained in the concrete basins and pumped back into tanks for treatment.

In 1996, LBNSY ceased use of the facility. A closure plan was completed on 4 October 1996 (BRASH 1996). Hazardous materials were removed and equipment was triple-rinsed by 30 October 1996. Liners were left in place at the tanks (Johnson, pers. comm. 1998). Decontamination, as well as soil and groundwater sampling, was conducted in 1999 at the IWTP under the Compliance Program at LBNC under a separate contract. Regulatory review for closure is pending.

4.47.3 Preliminary Assessment Resources

Table 4.47-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.47-3
AOC IWS 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Letter to Flexiliner	1990	LBNSY Contract Department	Requested repair work for tank liner.
Report of Industrial Wastewater Discharges	1991	SCS Engineers	Wastewater sampling results from multiple buildings.
IWTP Control & Management Plan	1993	Kennedy/Jenks Consultants	Described building connections; recommended modifications.
Test Report & Certification Precision Tank Testing	1993	NDE Environmental & HLA	Tested 7 tanks; all passes except No. 3 processing tank. Tank liner identified as leaking.
Industrial Wastewater and IWTP Control & Management Plan, Volume II	1993	Kennedy/Jenks Consultants	Includes operating and discharging permit information. Includes Inspection Plan, Waste Analysis Plan, Training Plan, Spill Prevention & Contingency Plan
Tiered Permit Site Survey Report	1994	ERM-West, Inc.	IWTP treatment description.
Volumetric Integrity Test Results for Tank No. 3	1994	NDE Environmental & HLA	Passed integrity test.
IWTP Preventative Maintenance Program (35%)	1994	Life Cycle Engineering & HLA	Maintenance plans and sampling procedures.
Certified Volumetric Tank Test and Hydrostatic Line Test	1995	NDE Environmental & HLA	Test results for sumps and lines at Building 210 and lines from Drydocks 1 and 2. Passed tank tests and hydrostatic line tests except results from Wastewater Line West were never finalized.
Industrial Wastewater Permit	1995	City of Los Angeles, Department of Public Works	Details the discharge limitations, monitoring requirements, reporting requirements, and any special conditions for discharging into the Los Angeles sanitary sewer system.
Tiered Permit Renewal Notification	1995	LBNSY-ED	Forms for each FTU; 600,000-gallon treatment capacity for IWTP.
IWTP Closure Plan	1996	BRASH Industries	Plan for closure of IWTP including pipelines. Included soil samples, wipe samples, and rinsate samples.
Tiered Permit Report	1997	LBNSY-ED	Background information and status of permits.
Letter to DTSC	1998	LBNSY-ED	Notice of intent to close.
Personnel Interview	1998	Nunn, LBNSY	Tour of facility; described process and equipment.
Personnel Interview	1998	DiDomenico, LBNSY and Sachse, BRASH	Closing through contract with BRASH. Conducted sampling. Report to be submitted to DTSC.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
HLA = Harding Lawson Associates
IWS = Industrial Wastewater System
IWTP = Industrial Wastewater Treatment Plant
LBNSY-ED = Long Beach Naval Shipyard-Environmental Department
No. = Number

4.47.4 PA Recommendations

No further action is recommended for AOC IWS 2 under the AOC Investigation, but further action is recommended is planned under the Compliance Program because of the large volume of wastes treated, chemicals used during treatment, and possibility of leaks and spills. Decontamination, as well as soil and groundwater sampling, will be conducted at the IWTP in 1999 under the Compliance Program at LBNC under a separate contract. The contractor will work with the Navy and regulatory agencies to complete the closure of the IWTP in 1999 or 2000.

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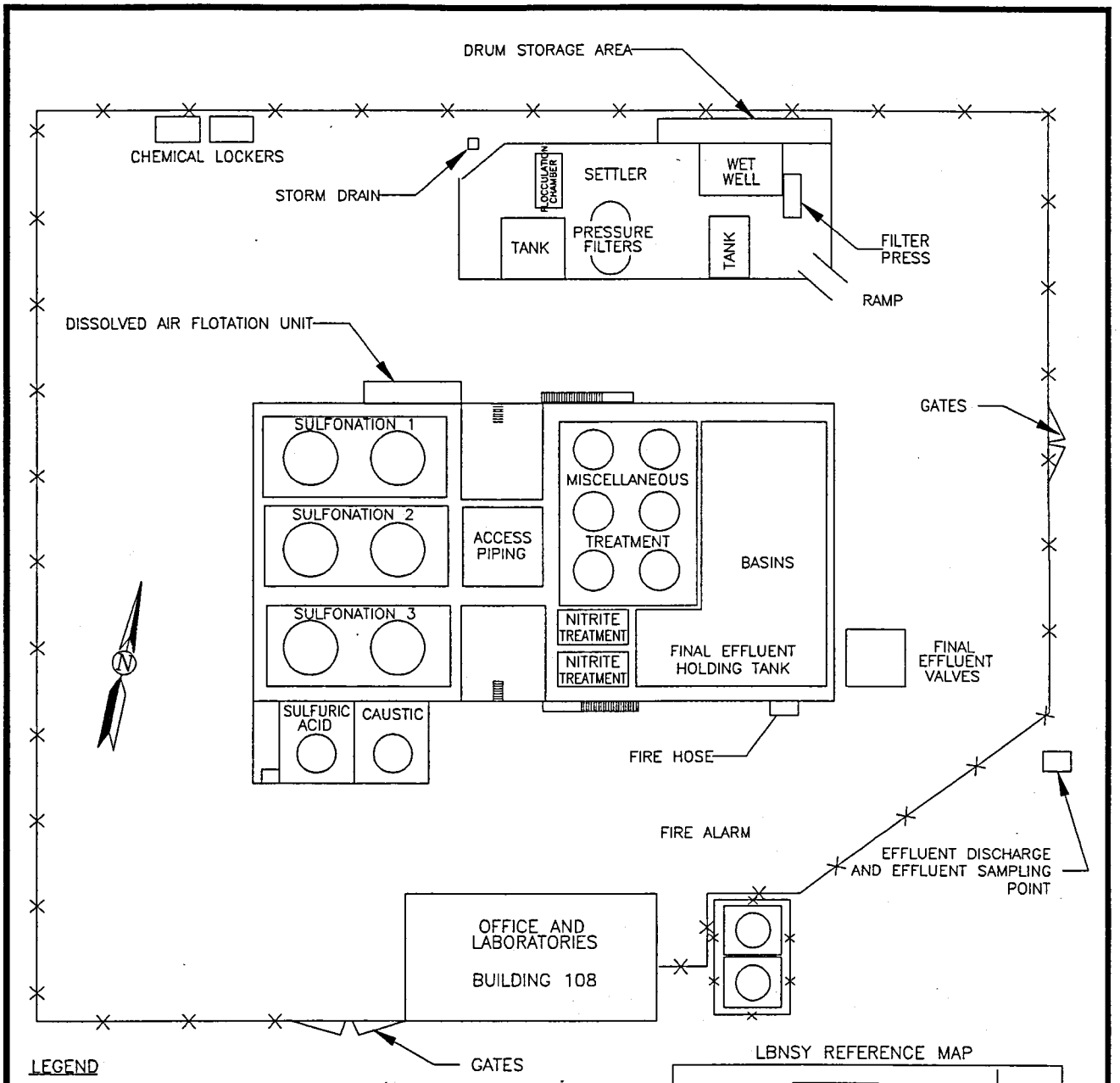

LEGEND

AOC = AREA OF CONCERN
IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT
IWS = INDUSTRIAL WASTEWATER SYSTEM
LBNSY = LONG BEACH NAVAL SHIPYARD
XX = FENCELINE

NOTE: SAMPLE LOCATIONS FROM INDUSTRIAL WASTEWATER TREATMENT PLANT CLOSURE PLAN DATED 4 OCTOBER 1996, BY BRASH INDUSTRIES.

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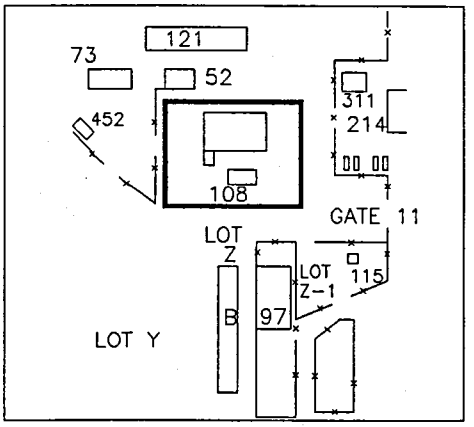
APPROXIMATE SCALE IN FEET

LBNSY REFERENCE MAP



SOURCE: CLOSURE PLAN FOR LBNSY IWTP.

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC IWS 2 INDUSTRIAL WASTEWATER TREATMENT PLANT GROUP B AREAS OF CONCERN	FIGURE 4.47-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.47-1	
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.47-2 Industrial Wastewater Treatment Plant, (AOC IWS 2) Facing South 2/12/98

Figure 4.47-3 Building 108 and the Western Side of the Industrial Wastewater Treatment Plant, (AOC IWS 2), Facing North 2/12/98

Figure 4.47-4 Eastern Side Industrial Wastewater Treatment Plant Tanks, (AOC IWS 2) Facing Southeast 3/12/98

Figure 4.47-5 Western Side of the Industrial Wastewater Treatment Plant Tanks (AOC IWS 2), Facing Southwest 3/12/98

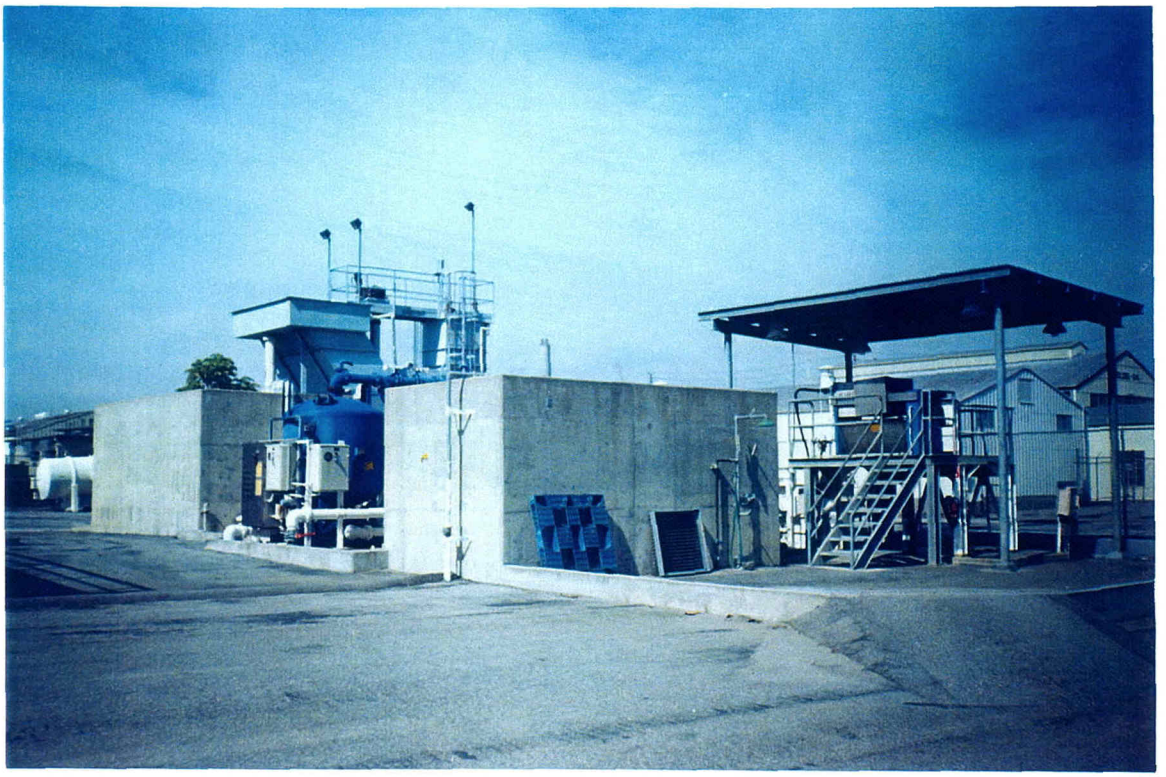

Figure 4.47-6 Industrial Wastewater Treatment Plant Settler and Compressor, (AOC IWS 2) Facing Northwest 3/12/98

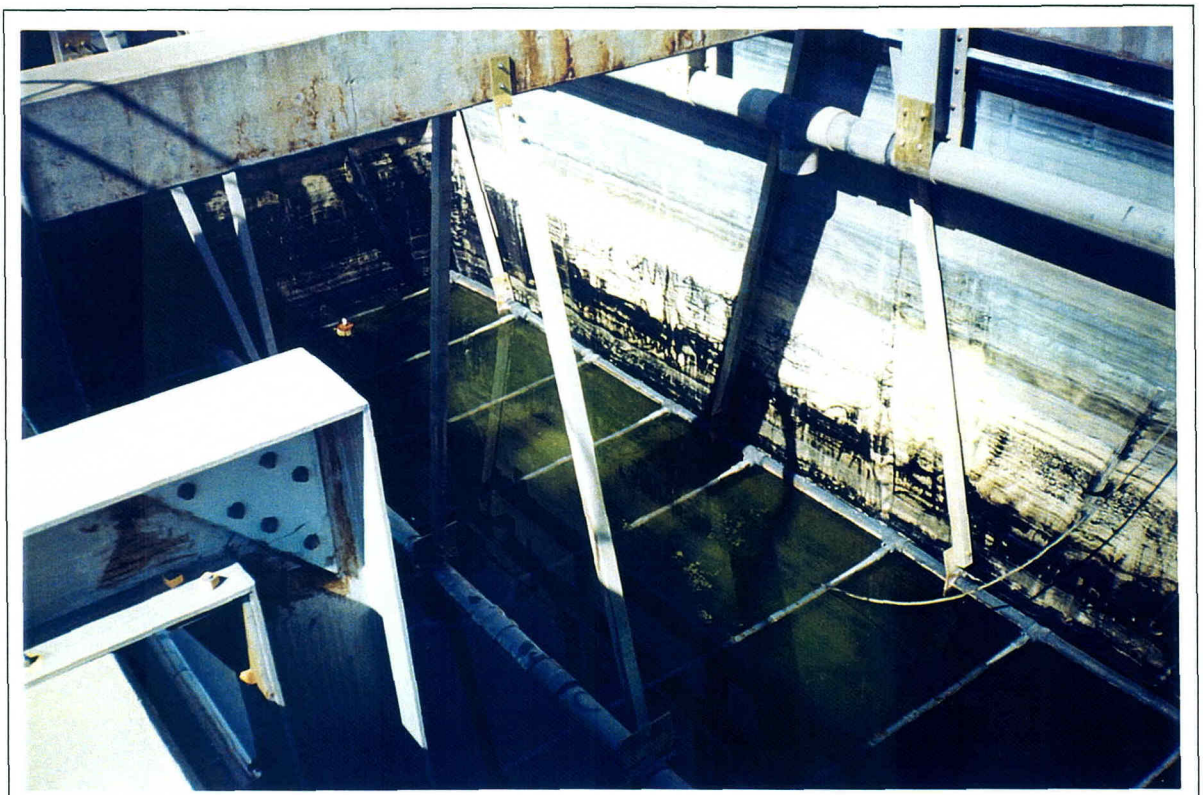

Figure 4.47-7 Example Industrial Wastewater Treatment Plant Tank, (AOC IWS 2) Facing Northwest 3/12/98

4.48 BILGE AND OILY WASTEWATER TREATMENT SYSTEM (BOWTS) (AOC IWS 3)

A description of the bilge and oily wastewater treatment system (BOWTS) (AOC IWS 3), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.48.1 to 4.48.4.

4.48.1 Site Description

Table 4.48-1 summarizes the location and characteristics of AOC IWS 3, which has been designated FTU 06 under the Tiered Permitting Program at LBNSY. A site map is shown in Figure 4.48-1 and site photographs are shown in Figures 4.48-2 and 4.48-3.

Table 4.48-1
AOC IWS 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 3	South of Building 132	K-31	Treatment of oily water and wastewater generated from ships.	Nine tanks: eight enclosed in a bermed area and one effluent holding tank outside the berm.	Tanks: 700-gallon OWS 200-gallon tank containing chemical demulsifiers 100-gallon tank containing caustic chemical 100-gallon tank containing polymer chemical 600-gallon induced air flotation treatment tank 1,000-gallon slop oil tank 11,000-gallon slop or reclaimed oil tank 2,090-gallon sludge holding tank 23,600-gallon effluent holding tank

AOC = Area of Concern
IWS = Industrial Wastewater System
No. = Number
OWS = Oil/Water Separator

AOC IWS 3 was located south of Building 132, next to Pier 1 near the harbor. It is listed as Building 891 in LBNSY documents. The BOWTS consists of nine tanks, with all but one (a 23,600-gallon effluent holding tank) surrounded by a 3-foot high concrete berm wall. During the March 1998 site reconnaissance, AOC IWS 3 appeared to be in good condition. There was no evidence of spills and the equipment appeared to be fully functional, although not in use. Small amounts of rainwater were observed in the bermed area, but had no oil sheen.

4.48.2 Operational History and Waste Characteristics

Table 4.48-2 summarizes the operational history and waste characteristics of AOC IWS 3.

Table 4.48-2
AOC IWS 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 3	1993 to 1996	Transport, storage, treatment, and discharge of bilge and oily wastewater.	Oily wastewater.	30,000 to 40,000 gallons treated per day.

AOC = Area of Concern
BOWTS = Bilge and Oily Wastewater Treatment System
IWS = Industrial Wastewater System
No. = Number

The BOWTS is identified as FTU 06 under a Tiered Permit with EPA ID Number CA6170023109. Under the Tiered Permit, the BOWTS was estimated to treat a maximum of 6,480,000 gallons per month (LBNSY-ED 1993). Oily wastewater was pumped from barge holding tanks via a three-inch flexible hose to the BOWTS onshore. The wastewater was treated at the BOWTS using phase separation in a coalescing plate OWS to remove oil, then induced air flotation to precipitate metal hydroxides (LBNSY-ED 1993). The facility treated approximately 30,000 to 40,000 gallons of wastewater each day (Aerovironment 1996), which equates to approximately 900,000 to 1,200,000 gallons per month.

Samples of treated water were collected from the 23,600-gallon holding tank after treatment. The number of samples collected per month is unknown, but most likely depended upon the volumes of wastewater treated. The wastewater typically contained 85% water and 15% oil (Aerovironment 1996). If the wastewater was determined to meet the industrial wastewater discharge limits, it was released to the sanitary sewer. If the wastewater was determined not to meet the industrial wastewater discharge limits, it was either recirculated through the system or pumped to a Baker tank and transported to the IWTP (see Section 4.47). Recovered oil was transported offsite for recycling.

In late 1996, LBNSY ceased use of the BOWTS facility. On 20 February 1997, LBNSY personnel rinsed all BOWTS equipment until no regulatory levels were exceeded in the rinse water.

No signs of leaks or spills were found during a facility inspection in 1996 (Aerovironment 1996). The LBNSY spill log (Appendix B) did not list any spills at the BOWTS.

4.48.3 Preliminary Assessment Resources

Table 4.48-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.48-3
AOC IWS 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Tiered Permit Application	1993	LBNSY-ED	Conditional Authorization application form.
Tiered Permit Authorization	1993	DTSC	Permit number CA 6170023109 issued 14 December 1993.
LBNSY SPCC Plan	1996	Aerovironment	Description of facility.
SAP Database	1996	LBNSY-ED	Summary of wastes stored at site.
Analytical Results	1997	LBNSY-ED	Results of rinsate analysis.
Tiered Permit Report	1997	DTSC	Background information and status of permits.
Personnel Interview	1998	DiDomenico, LBNSY and Sachse, BRASH	Described decontamination procedures for internal closure. Described final fate of wastes.
Closure Request Letter	1998	LBNSY Site Caretakers Office	3 April 1998 letter requesting closure of FTUs 05 through 11, including BOWTS.

AOC = Area of Concern
BOWTS = Bilge and Oily Wastewater Treatment System
CA = California
DTSC = Department of Toxic Substances Control
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Department
No. = Number
SAP = Satellite Accumulation Point
SPCC = Spill Prevention, Control, and Countermeasures Plan

4.48.4 PA Recommendations

No further action is recommended for AOC IWS 3 based upon the following findings:

- The facility was operated for less than four years and was built with containment to prevent release of wastes;
- The facility was conditionally authorized by DTSC;
- The equipment was triple-rinsed after removing the hazardous materials;
- The tanks were not open-topped; and
- Records show no spills at the site.

Closure of AOC IWS 3 as an FTU will be performed under the Compliance Program. On 3 April 1998, the Navy submitted a letter requesting closure under the Tiered Permitting Program. The Navy is awaiting response from the CUPA.

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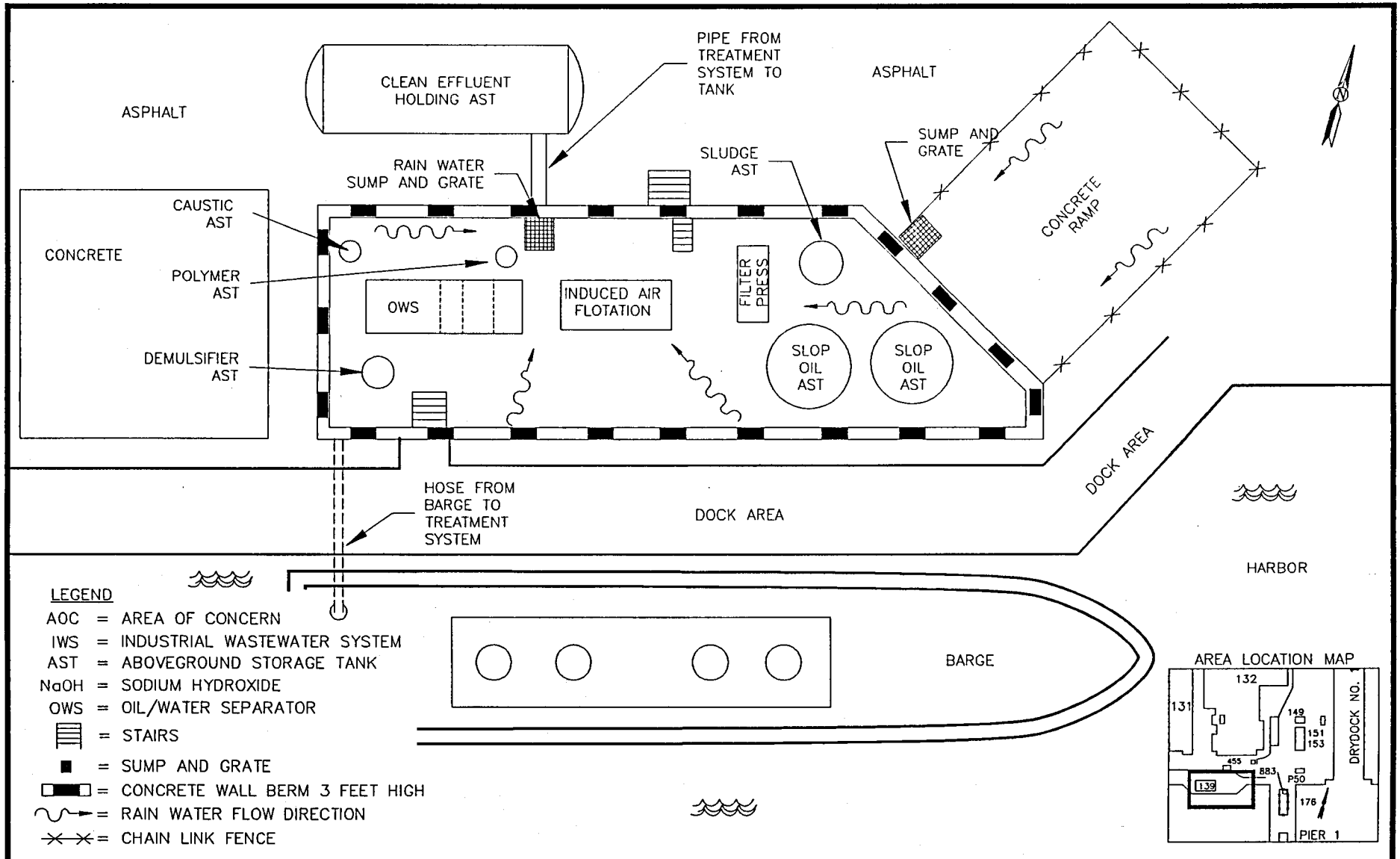

S-8th

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC IWS 3 BILGE AND OILY WASTEWATER TREATMENT SYSTEM (BOWTS) GROUP B AREAS OF CONCERN	FIGURE 4.48-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.48-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.48-2 Bilge and Oily Wastewater Treatment System (BOWTS) (AOC IWS 3), Facing Southeast 9/22/98

Figure 4.48-3 Bilge and Oily Wastewater Treatment System (BOWTS) (AOC IWS 3), Facing East 9/22/98

4.49 LIQUID INDUSTRIAL WASTE (LIW) TANKS (AOC IWS 4)

This section presents a description of the Liquid Industrial Waste (LIW) tanks (AOC IWS 4), its operational history and waste characteristics, PA resources used, and recommendations are presented in Section 4.49.1 to 4.49.4.

4.49.1 Site Description

Table 4.49-1 summarizes the location and characteristics of AOC IWS 4, which has been designated FTU 09 under the Tiered Permitting Program at LBNSY. Site maps are provided as Figures 4.49-1 and 4.49-2. Site photographs are shown in Figures 4.49-3 and 4.49-4.

Table 4.49-1
AOC IWS 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 4	One set of tanks on the west side of Drydock 1 and one set between Drydocks 2 and 3.	F-34 and G-26 respectively.	Wastewater treatment system for drydock wastewater.	Two sets of three aboveground tanks and one sediment clarifier surrounded by concrete berm.	Tanks: each approximately 35 feet high and 15 feet in diameter.

AOC = Area of Concern IWS = Industrial Wastewater System No. = Number

LBNSY has two sets of LIW tanks, identical in design, but servicing different locations. Each facility consists of a set of three storage tanks, a clarifier, and a mixer surrounded by a three-foot high concrete berm. One set of tanks is located west of Drydock 1, and the other is located between Drydocks 2 and 3. During the March 1998 site reconnaissance, the LIW tanks appeared to be in good condition. There was no evidence of spills, and the equipment appeared to be functional. Recent rainwater (less than 0.5-inches) contained in the bermed area had no oil sheen.

4.49.2 Operational History and Waste Characteristics

Table 4.49-2 summarizes the operational history and waste characteristics of AOC IWS 4.

Table 4.49-2
AOC IWS 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 4	Approximately 1993 to 1997.	Phase separation by gravity settling of wastewater generated from drydock washdown and seepage water from drydock floors and walls.	Wastewater and associated contaminants removed from the wastewater including heavy metals, oils, and particulates.	FTU 09 treated approximately 165,000 gallons of wastewater per month. FTU 10 treated approximately 420,000 gallons of wastewater per month.

AOC = Area of Concern
FTU = Fixed Treatment Unit
IWS = Industrial Wastewater System
No. = Number

AOC IWS 4 LIW tanks are identified as FTU 09 (west of Drydock 1) and FTU 10 (between Drydocks 2 and 3) under the Tiered Permit with U.S. EPA ID Number 6170023109.

The LIW tanks treated wastewater from washdown of drydocks and seepage water from drydock floors and walls (LBNSY-ED 1993). The primary wastestream was sandblast grit and paints. After phase separation by gravity settling, a water sample was collected and sent to a laboratory for testing. After analysis was completed and the wastewater was determined to meet the industrial wastewater NPDES discharge limits, it was discharged to the sanitary sewer via one of the two 6-inch diameter PVC pipes. If the wastewater did not meet NPDES limits, it could be directly piped to the IWTP for further treatment; however, this step was rarely used because most treated wastewater met NPDES discharge limits (Johnson, pers. comm., 1998). Sludge waste was dried and hauled offsite (LBNSY-ED 1993). FTU 09 (Drydock 1) treated approximately 165,000 gallons of wastewater per month, while FTU 10 (Drydocks 2 & 3) treated approximately 420,000 gallons of wastewater per month (LBNSY-ED 1993).

On 15 February 1997, LBNSY ceased use of the facilities (LBNSY-ED 1997). In February 1997, LBNSY personnel removed 1,000 gallons of water and some sludge from inside the tanks and pipes (LBNSY-ED 1997). The inside of the tanks was triple-rinsed and the rinsate was sampled. Operational closure of these LIW tanks was completed by LBNSY-ED on 5 March 1997. On 3 April 1998, the Navy submitted a letter requesting closure under the Tiered Permitting Program and the Navy is awaiting CUPA response.

The LBNSY spill log (Appendix B) does not list any spills at either LIW tank location.

4.49.3 Preliminary Assessment Resources

Table 4.49-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.49-3
AOC IWS 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LIW File	Various	Various	Operating manuals, equipment files, studies, integrity test results.
Tiered Permit Application and Report	1993	LBNSY-ED	Background information and status of permits.
Closure Documentation	1997	LBNSY-ED	Steps taken for internal closure of facility; brief site environmental history.
Closure Request Letter	1998	LBNSY Site Caretakers Office	3 April 1998 letter requesting closure of FTUs 05 through 11, including BOWTS.
Personnel Interview	1998	Johnson, DiDomenico, LBNSY and Sachse, BRASH	Decontamination procedures. Fate of wastes.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
FTU = Fixed Treatment Unit
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Department
LBNSY = Long Beach Naval Shipyard
LIW = Liquid Industrial Waste
No. = Number

4.49.4 PA Recommendations

No soil or groundwater sampling is recommended for AOC IWS 4 based upon the following findings:

- The facility is less than five years old;
- The facility was built with containment berms to prevent release of wastes;
- The facility was conditionally authorized by DTSC;
- The inside of the tanks and pipes were triple-rinsed after removing the wastes;
- The records show no spills at the site; and
- DTSC, U.S. EPA, and RWQCB representatives agreed during a 22 September 1998 site walk that no sampling was required as long as the sump does not discharge wastes via any surface pipes (this was subsequently verified).

Further action will be performed under the Compliance Program: specifically, the pipelines connecting the LIW tanks to both the IWTP and sanitary sewer will be capped before closure.

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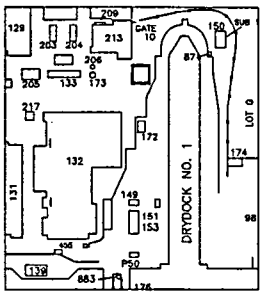

AREA LOCATION MAP

WASTEWATER LINES FROM DRYDOCK 1

RECIRCULATION PIPE FROM SUMP

GRAVITY SETTLING TANK

WASTEWATER COLLECTION TANKS

WASTEWATER COLLECTION TANKS

WASTEWATER COLLECTION TANKS

ASPHALT

RAINWATER SUMP AND GRATE

ASPHALT

SEALED CONCRETE

TO DRYDOCK 1

LINES TO IWTP

ASPHALT

LEGEND

AOC = AREA OF CONCERN

= SUMP AND GRATE

= CONCRETE WALL BERM (3-FEET HIGH)

IWS = INDUSTRIAL WASTEWATER SYSTEM

IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT

= DIRECTION OF FLOW

= UNDERGROUND PIPELINE

0 20

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC IWS 4 LIQUID INDUSTRIAL WASTE TANKS NEAR DRYDOCK 1	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.49-1	GROUP B AREAS OF CONCERN	4.49-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.94-5

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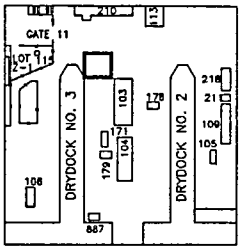

AREA LOCATION MAP

LINES TO IWTP

ASPHALT

ASPHALT

WASTEWATER COLLECTION TANKS

WASTEWATER COLLECTION TANKS

SEALED CONCRETE

RAIN WATER SUMP AND GRATE

WASTEWATER COLLECTION TANKS

GRAVITY SETTLING TANKS

TO DRYDOCK 3

LINES FROM DRYDOCKS

TO DRYDOCK 2

ASPHALT

LEGEND

AOC = AREA OF CONCERN

= SUMP AND GRATE

= CONCRETE WALL BERM (3-FEET HIGH)

IWS = INDUSTRIAL WASTEWATER SYSTEM

IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT

= DIRECTION OF FLOW

= UNDERGROUND PIPELINE

0 10 20

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC IWS 4 LIQUID INDUSTRIAL WASTE TANKS NEAR DRYDOCKS 2 AND 3 GROUP B AREAS OF CONCERN	FIGURE 4.49-2
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.49-2		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.49-3 Liquid Industrial Waste (LIW) Tanks West of Drydock 1 (AOC IWS 4)
Facing east 3/11/98

Figure 4.49-4 Liquid Industrial Waste (LIW) Tanks between Drydocks 2 and 3 (AOC IWS 4),
Facing Northwest 3/11/98

4.50 OIL/WATER SEPARATOR AND CLARIFIER AND TANKS, BUILDING 132 (AOC IWS 5)

A description of the oil/water separator (OWS) and clarifier and tanks at Building 132 (AOC IWS 5), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.50.1 to 4.50.4.

4.50.1 Site Description

Table 4.50-1 summarizes the location and characteristics of AOC IWS 5, which has been designated FTU 05 under the Tiered Permitting Program at LBNSY. A site map is provided as Figure 4.50-1. Site photographs are shown in Figures 4.50-2 and 4.50-3.

Table 4.50-1
AOC IWS 5 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 5	East of Building 132, approximately 25 feet south of the Pipe Shop	I-33	OWS and clarifier and tanks associated with Building 132 Pipe and Copper Shop operations.	Four tanks consisting of two OWS/clarifier units, one holding tank, and one diversion tank.	Tanks: 3200 gallons 2300 gallons 2300 gallons 900 gallons

AOC = Area of Concern
IWS = Industrial Wastewater System
No. = Number
OWS = Oil/Water Separator

During the January 1998 site reconnaissance, four manhole covers (3 round and 1 square) were removed to observe the AOC IWS 5 tanks. Each tank had an access port located above the tank. Observations of each tank's condition and confirmation of their depths were not possible because the tanks were full of liquid with a slight oil sheen on the surface. An 8-foot long piece of pipe was lowered into each tank, but the bottom was not reached, meaning the depth of the tank plus access port was at least 8 feet. The tank dimensions were reported to be 5 feet by 5 feet by 5 feet (LBNSY-ED 1996).

A small area of sunken asphalt located two feet southwest of the tanks was observed (see Figure 4.50-2). An historical drawing identified a tank or sump in this area (LBNSY-PW date unknown), but it may possibly have been removed by the time of the 1998 site reconnaissance.

Based upon a review of historical site maps, it appears that the center two tanks were the OWS/clarifier unit, the easternmost tank was a holding tank (LBNSY-PW date unknown), and the westernmost tank was a diversion tank (OHM 1996). Floor drains from the Pipe and Copper Shop, tin dip tanks, Valve Cleaning/Plating Shop, and boiler room drained into a 4-inch diameter subsurface pipe that drained into the OWS/clarifier as discussed in Section 4.50-2. It is not clear how the diversion tank was connected to the others. This diversion tank was also identified as Tank 132.1 (AOC UST 14) (Section 4.181).

None of these tanks was being used during the January 1998 site reconnaissance or subsequent site visits in 1998.

4.50.2 Operational History and Waste Characteristics

Table 4.50-2 summarizes the operational history and waste characteristics.

Table 4.50-2
AOC IWS 5 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 5	Approximately 1960s to 1996	Generation of industrial wastewater from four Building 132 sources.	Rinse water containing oils and grease, metals, rosin wastes, boiler condensate, and valve cleaning wastes.	Approximately 40,000 gallons of wastewater treated per month

AOC = Area of Concern IWS = Industrial Wastewater System No. = Number

The SCS Engineers 1991 Industrial Wastewater Discharge Study identified the following four sources of wastewater discharge to the AOC IWS 5 tanks:

1. Wastewater was mainly generated from the Building 132 Pipe and Copper Shop. Wastewater was generated during the hydrotesting of pipes and other pieces of equipment in the southern area of this shop. Wastewater from the area flowed through a single floor drain with a trap to prevent large solids from entering the waste stream. Daily flow from these operations was approximately 500 to 1,000 gallons and contaminants from the operations included oils and greases and various heavy metals (SCS 1991). In addition, wastewater was generated in the northern portion of the Pipe and Copper Shop from a 1000-gallon hot water tank used for the quenching and rinsing of parts used by the Wave Guide shop. The tank was reportedly discharged on a daily basis (SCS 1991). Rosin wastes were generated in this area. Potential contaminants included oils, grease, and various metals (mainly aluminum and copper).
2. Wastewater was also generated during rinsing and cooling activities as part of tin dip tank operations located in the northwest corner of Building 132 (AOC PT 8; see Section 4.72). The tanks have two floor drains in the area to collect any spillage of rinse/cooling water, which are reportedly connected to AOC IWS 5. The flow from this area was highly variable and averaged less than 10 gallons per day (SCS 1991).
3. According to LBNSY-PW maps, five floor drains in the Valve Cleaning/Plating Shop (AOC PT 4, see Section 4.68) also drained to AOC IWS 5. One report stated that this connection was never actually completed (Kennedy/Jenks Consultants 1993). Near the floor drains in this shop, motor blocks were

cleaned with kerosene and then rinsed with steam and water. Wastewater generated from the adjacent rinse area, with an intermittent flow of 3 to 6 gallons per minute (gpm), was discharged to the sanitary sewer in the 1970s (CDM 1977).

4. Boiler room condensate from the southern portion of Building 132 drained to AOC IWS 5.

The OWS and clarifier wastewater contents were discharged to the sanitary sewer system. Oil and sludge that was collected in the tanks was transported offsite for recycling (ERM 1994). AOC IWS 5 was identified as FTU 05 in the Tiered Permit program under U.S. EPA ID Number CA6170023109 (LBNSY-ED 1993). A maximum of 40,000 gallons of wastewater was treated per month according to the Tiered Permit. The FTU was reported to treat wastes by separating oils and heavy metals from wastewater generated from Building 132 operations.

Samples were collected from each of the clarifier tanks in late 1996 (OHM 1997). Figure 4.50-4 summarizes the analytical results. Several metals were detected at high concentrations in clarifier sample "5" and holding tank sample "6"; the only VOCs detected were xylene in sample "5" and toluene in sample "7." The only SVOC detected was BEHP in sample "7." PCBs were not detected in any samples. A soil sample collected at a depth of 5.5 feet bgs near the tanks indicated no VOCs detected and no metals above background levels.

4.50.3 Preliminary Assessment Resources

Table 4.50-3 summarizes the resources used and interviews conducted in the PA evaluation.

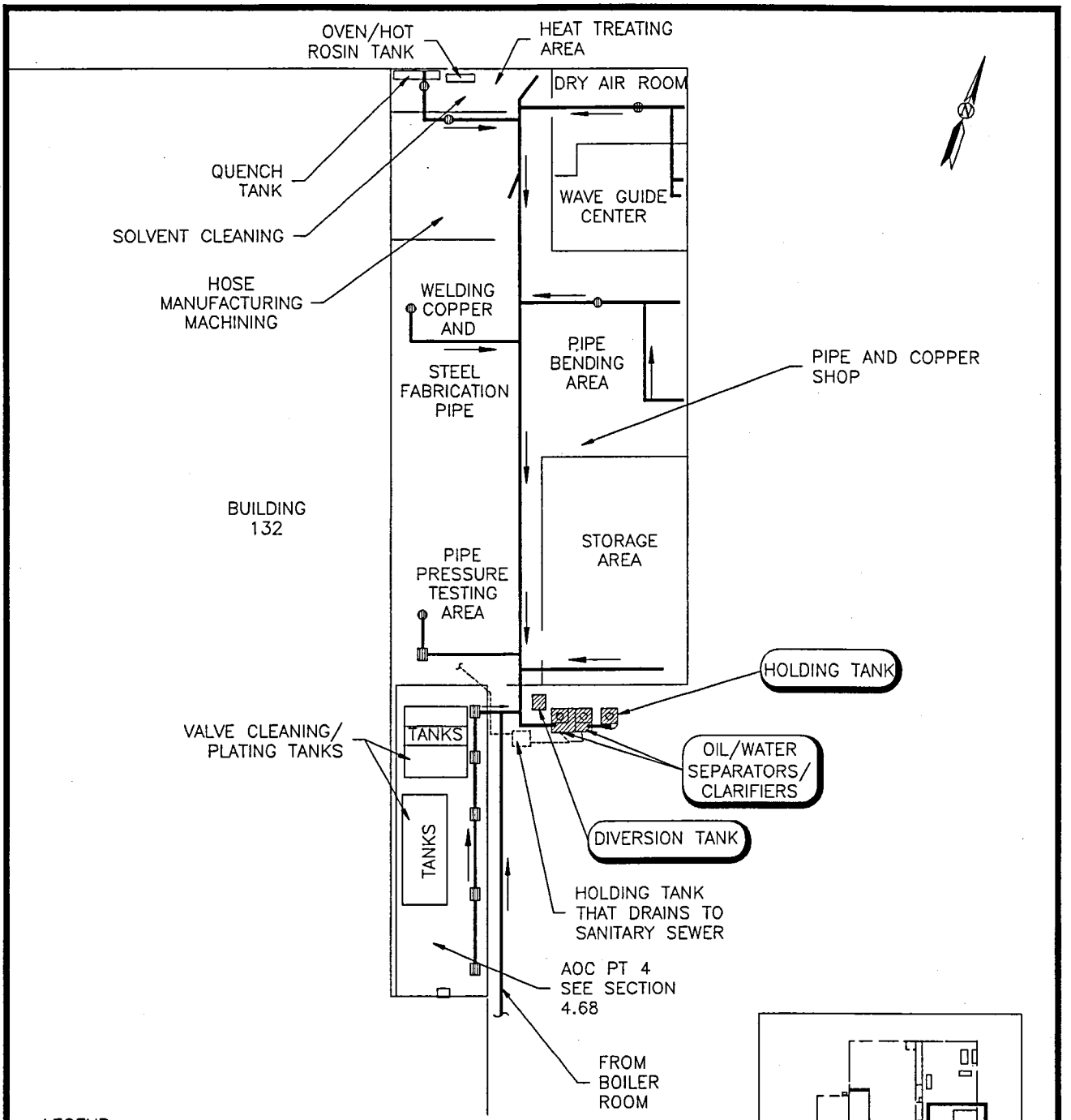
Table 4.50-3
AOC IWS 5 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing Number 21,369	unknown	LBNSY-PW	Subsurface utilities, zone 5, plat 8, Building 132, east area.
Drawing Number 24,240	1978	LBNSY-PW	Shows layout and details of Pipe and Copper Shop activities.
Drawing Number 24,241	1978	LBNSY-PW	Shows 2 clarifiers, 1 industrial waste holding tank, 1 manhole with pump discharge to sanitary sewer.
Sampling and Analysis Plan, Industrial Wastewater Discharge Study	1991	SCS Engineers	Description of Building 132 operations discharging to AOC IWS 5.
IWTP Control & Management Plan	1993	Kennedy/Jenks Consultants	Described building connections; recommended modifications
Tiered Permit Report	1993	LBNSY-ED	Background information and status of permits.
Draft Site Survey Report, Hazardous Waste Tiered Permitting Project	1994	ERM-West, Inc.	Information regarding the tiered permitting process including the oil and water separator unit located east of Building 132.
Public Works Property Records	1996	LBNSY-ED	General Building 132 information.
Separators, Clarifiers and Sumps	1996	LBNSY-ED	Description and map of Oil/Water Separator & Clarifier located east of Building 132. Lists 4 tanks.
Sampling Report	1997	OHM	Waste sample results.

AOC = Area of Concern
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
LBNSY-PW = Long Beach Naval Shipyard, Public Works Department
UST = Underground Storage Tank

4.50.4 PA Recommendations

No further action is recommended for AOC IWS 5 under the AOCs Investigation project because it is being handled under the Compliance Program. These tanks were removed in 1999 and the closure report submitted in December 1999 is being reviewed by the regulatory agencies.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC IWS 5 OIL/WATER SEPARATORS & CLARIFIERS AND TANKS BUILDING 132 GROUP B AREAS OF CONCERN	FIGURE 4.50-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.50-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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Figure 4.50-2 Holding Tank, Oil/Water Separator/Clarifier Tanks, and Diversion Tank (front to back) (AOC IWS 5), East of Bldg. 132, Facing West 3/12/98

Figure 4.50-3 Diversion Tank Access Port, (AOC IWS 5), East of Building 132, Facing Down 12/15/98

4.51 OIL/WATER SEPARATOR AND CLARIFIER UNIT, BUILDING 54 (AOC IWS 6)

A description of the OWS and clarifier unit at Building 54 (AOC IWS 6), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.51.1 to 4.51.4.

4.51.1 Site Description

Table 4.51-1 summarizes the location and characteristics of AOC IWS 6, which has been designated FTU 07 under the Tiered Permitting Program at LBNSY. A site map is provided as Figure 4.51-1. Site photographs are shown in Figures 4.51-2 and 4.51-3.

Table 4.51-1
AOC IWS 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 6	Building 882 (west of Building 54)	C-21, C-22 D-21, D-22	OWS and clarifier unit associated with the vehicle wash area.	One drain pit leading to the OWS, the OWS, and a drain sump (grease trap).	OWS: 68 inches by 9 feet by 54 inches (approximately 1,700 gallons). Drain pit to OWS: 32 inches by 14 feet by 30 inches (approximately 700 gallons). Drain sump: 32 inches by 45 inches by unknown depth.

AOC = Area of Concern
IWS = Industrial Wastewater System
No. = Number
OWS = Oil/Water Separator

The OWS and clarifier unit associated with Building 54 (AOC IWS 6) is located beneath a vehicle wash platform identified as Building 882. Building 882, built in 1963 (LBNSY-ED 1996), consists of a roof and walls on the northern and southern sides covering the vehicle wash platform. During the March 1998 site reconnaissance, the vehicle wash building was still in place and metal grates covered the OWS, drain pit, and sump.

4.51.2 Operational History and Waste Characteristics

Table 4.51-2 summarizes the operational history and waste characteristics.

Table 4.51-2
AOC IWS 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 6	1963 to 1996	Generation of rinse water from the washing of vehicles; separation of oil from water by phase separation.	Rinse water containing oils and grease.	Approximately 6,000 (SCS 1991) to 50,000 (LBNSY-ED 1995) gallons per month. Approximately 1,500 gallons per week (SCS 1991).

AOC = Area of Concern
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
No. = Number

During hand-washing of vehicles from 1963 to 1996, rinse water entered the drain pit and drained into the OWS. Oil and sediment were separated from the wastewater by gravity settling and baffles in the OWS. The exact connection to or use of the drain sump (grease trap) is not clear.

Approximately three large vehicles (e.g., buses and trucks) were cleaned per week (SCS 1991). An estimated 500 gallons of wastewater were generated per vehicle, but the volume of wastewater was intermittent based on demand. The estimated monthly volume of wastewater treated varied from 6,000 gallons (SCS 1991) to 50,000 (LBNSY-ED 1995).

The car washing operations used detergents such as "Ardox Aircraft Cleaner" and "Advantage II" (NEESA 1990). When the trap became filled with sediment, the sediment was pumped out, stored in a bin behind Building 302, and picked up by a contractor approximately every 6 months (NEESA 1990). Any overflow of the OWS was discharged to the sanitary sewer. The collected oils and grease were transported offsite for recycling. The potential contaminants from this OWS include oils, grease, and detergents (SCS 1991) that may have leaked out of the OWS.

AOC IWS 6 is identified as FTU 07 in the Tiered Permit with U.S. EPA ID Number CA6170023109.

4.51.3 Preliminary Assessment Resources

Table 4.51-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.51-3
AOC IWS 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Subsurface Utilities Maps: Zone 3, Plats 5 and 6.	1960s	LBNSY	Show subsurface features including the drain pit and grease trap.
Brown and Caldwell	1983	Brown and Caldwell	Information regarding the handling of wastewater at Building 54.
Update of Engineering Evaluation	1988	Archiplan	Building inspection checklist.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Description of car-washing activities at Building 54.
Sampling and Analysis Plan, Industrial Wastewater Discharge Study and Baseline Monitoring Report	1991	SCS Engineers	Description of the wastewater source for the OWS and clarifier unit located adjacent to Building 54.
Tiered Permit Application	1993	LBNSY-ED	Permitting information for FTU 07.
Tiered Permitting Report	1995	LBNSY-ED	Information about fixed treatment units.
Public Works Property Records	1996	LBNSY-ED	General Building 882 information.
Separators, Clarifiers, and Sumps	1996	LBNSY-ED	Description and map of OWS and clarifier unit located adjacent to Building 54.

AOC = Area of Concern
FTU = Fixed Treatment Unit
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
OWS = Oil/Water Separator

4.51.4 PA Recommendations

No further action is recommended for AOC IWS 6 under the AOC Investigation project because it is being handled under the Compliance Program. The OWS, drain pit, and drain sump were removed under the UST Compliance Program in 1999. The closure report submitted in December 1999 is being reviewed by the regulatory agencies.

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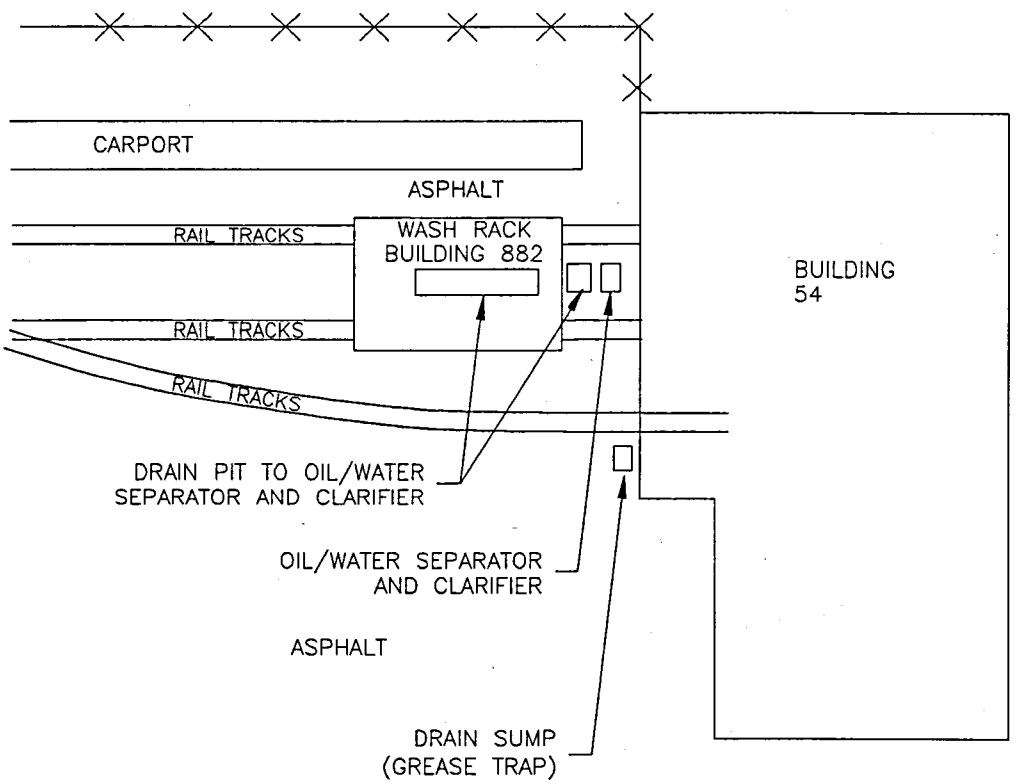

LEGEND

AOC = AREA OF CONCERN
IWS = INDUSTRIAL WASTEWATER SYSTEM
→×←×← = CHAIN LINK FENCE

0 20 40 60 80 100
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC IWS 6 OIL/WATER SEPARATOR AND CLARIFIER BUILDING 54 GROUP B AREAS OF CONCERN	FIGURE 4.51-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.51-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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Figure 4.51-2 Vehicle Washing Area (AOC IWS 6) 9/23/98
Facing East

Figure 4.51-3 Oil/Water Separator and Clarifier near Building 54 (AOC IWS 6) 9/23/98
Facing West

4.52 OIL/WATER SEPARATOR AND CLARIFIER UNIT, BUILDING 210 (AOC IWS 7)

A description of the OWS and clarifier unit at Building 210 (AOC IWS 7), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.52.1 to 4.52.4.

4.52.1 Site Description

Table 4.52-1 summarizes the location and characteristics of AOC IWS 7, which has been designated FTU 08 under the Tiered Permitting Program at LBNSY. A site map is provided as Figure 4.52-1 and a site photograph is shown in Figure 4.52-2.

Table 4.52-1
AOC IWS 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
IWS 7	East of Building 210	E-26	Two separate OWS and clarifier units associated with Building 210.	Two chambers in both of the OWS/clarifier units.	34 inches by 54 inches by 45 inches deep.

AOC = Area of Concern
No. = Number
IWS = Industrial Wastewater System
OWS = Oil/Water Separator

During the March 1998 site reconnaissance, two OWS/clarifier units were observed on the eastern side of Building 210. Both contained liquid, possibly rainwater, but were no longer in use.

One unit (labeled Number 1) was located near the steam-cleaning area outside Building 210; a floor drain in the steam-cleaning area drained to the OWS/clarifier unit. A second unit (labeled Number 2) was located approximately 50 feet further south and the source of wastes that may have entered it was not evident. It is not clear whether the EBS identified the first or second OWS/clarifier unit as AOC IWS 7, so both are addressed as AOC IWS 7 in this report.

4.52.2 Operational History and Waste Characteristics

Table 4.52-2 summarizes the operational history and waste characteristics.

Table 4.52-2
AOC IWS 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
IWS 7	1970 to 1996	Separation of oil from water by phase separation.	Oily wastewater from steam-cleaning operations.	Approximately 100 gallons per day. Permitted for 10,000 gallons per month under Tier IV-CA permit.

AOC = Area of Concern
CA = California
IWS = Industrial Wastewater System
No. = Number

One OWS at AOC IWS 7 treated oily wastewater generated from outside steam-cleaning operations located on the eastern side of Building 210. The steam-cleaner was reportedly used for cleaning electrical motors prior to repair (SCS 1991). Approximately 100 gallons of wastewater was generated per day (SCS 1991). The wastewater from the steam-cleaner flowed to the OWS prior to entering the sanitary sewer system. Collected oil was stored at Pier E and transported off-site for recycling. The source of wastewater to the second OWS at AOC IWS 7 is unknown, but likely was from shop activities inside Building 210.

AOC IWS 7 operated under a Tier IV-CA permit and was identified as FTU 08, U.S. EPA identification number CA6170023109. AOC IWS 7 was inspected during the permitting process to ensure that the FTU functioned according to permit requirements. On 3 April 1998, the Navy submitted a letter requesting closure under the Tiered Permitting Program and the Navy is awaiting CUPA response.

4.52.3 Preliminary Assessment Resources

Table 4.52-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.52-3
AOC IWS 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Sampling and Analysis Plan, Industrial Wastewater Discharge Study	1991	SCS Engineers	Description of steam-cleaning activities at Building 210.
Site Survey Report for Tiered Permitting Program	1994	ERM-West, Inc.	Identified two OWS units, one with a steam-cleaning source and the other with an unknown source. No tiered permit was recommended at that time.
Separators, Clarifier units and Sumps	1996	LBNSY-ED	Description and map of OWS and clarifier unit located adjacent to Building 210.

AOC = Area of Concern
IWS = Industrial Wastewater System
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
OWS = Oil/Water Separator

4.52.4 PA Recommendations

No further action is recommended for AOC IWS 7 under the AOC Investigation project because it is being handled under the Compliance Program. Both OWS and clarifier units are scheduled for removal in 1999 under the UST Compliance Program.

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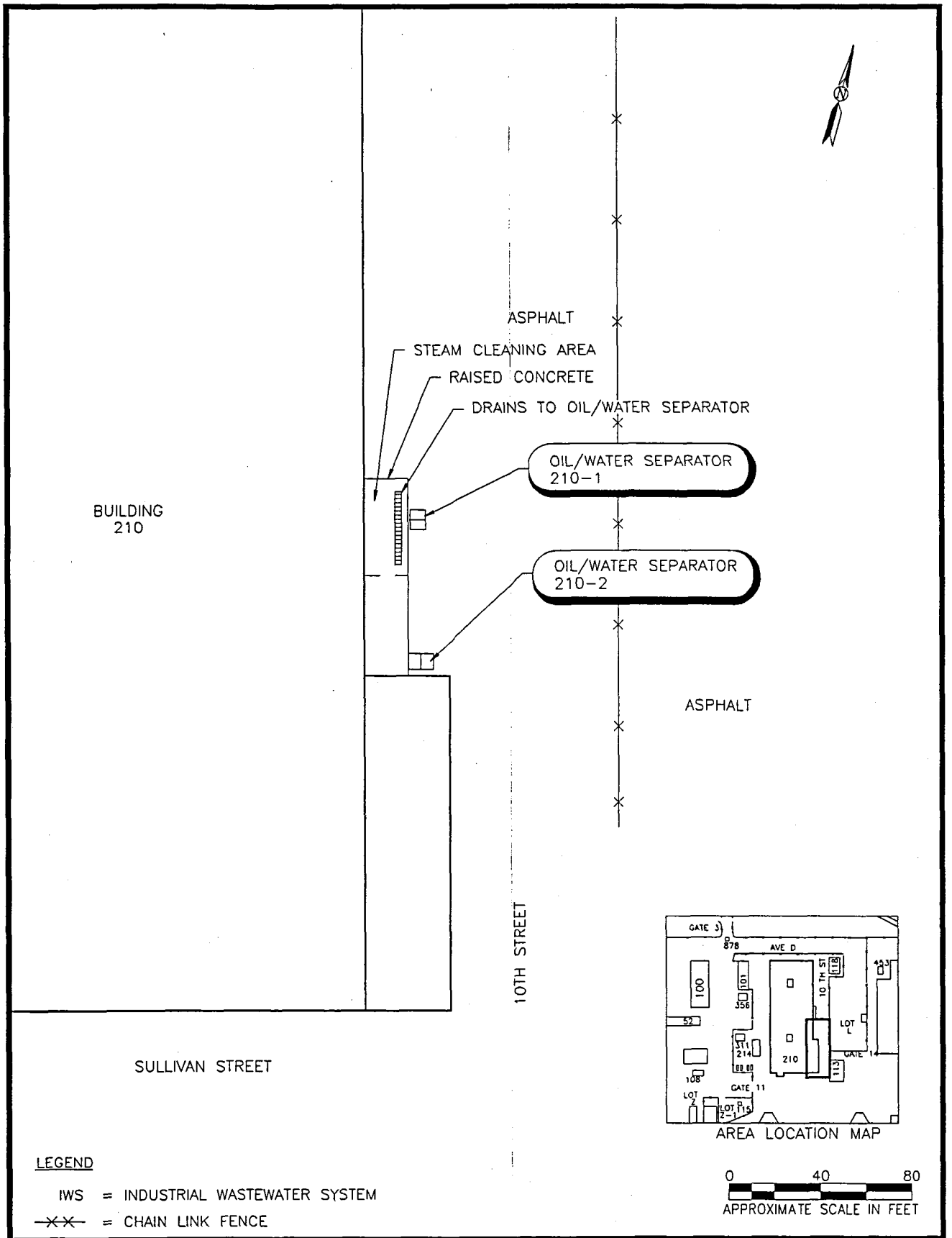

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC IWS 7 OIL/WATER SEPARATORS BUILDING 210 GROUP B AREAS OF CONCERN	FIGURE 4.52-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.52-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

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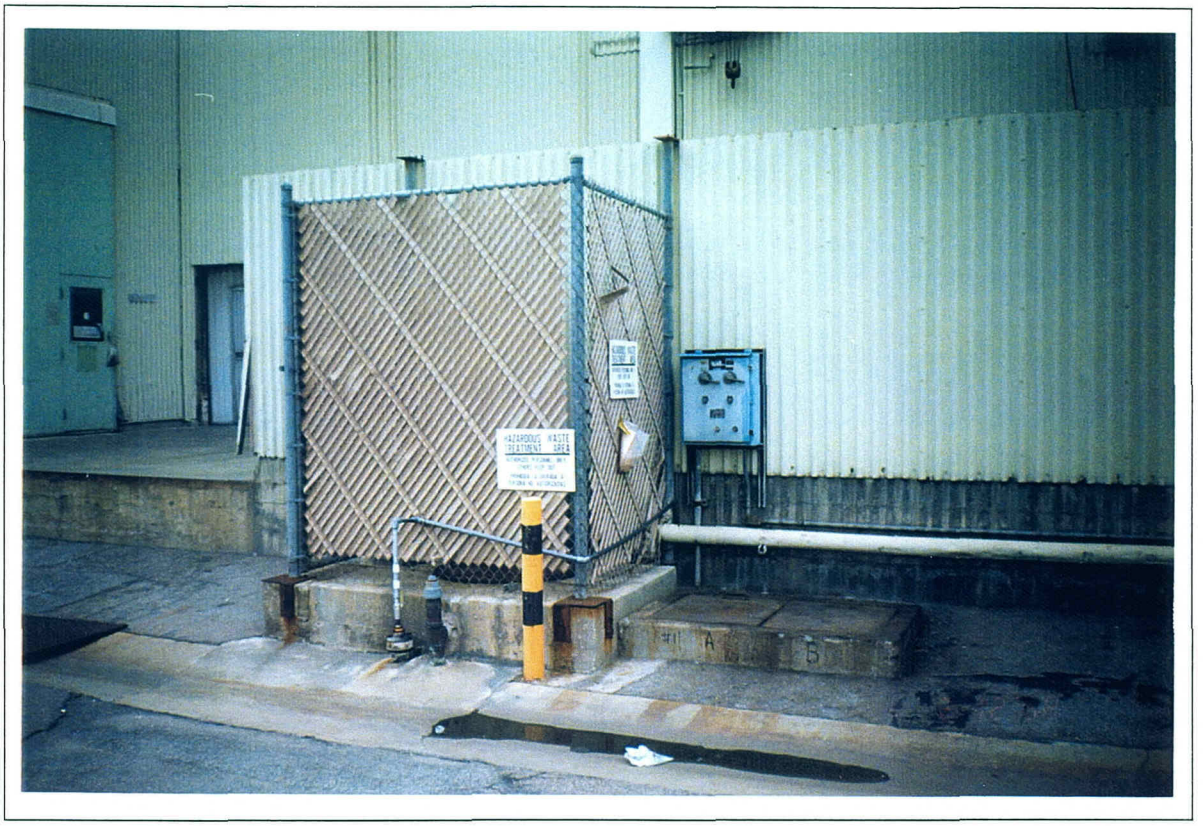


Figure 4.52-2 Oil/Water Separator and Clarifier Unit at Building 210 (AOC IWS 7), Facing west 2/12/98

Figure 4.52-3 Inside Oil/Water Separator and Clarifier Unit at Building 210 (AOC IWS 7), Facing Down 3/11/98

4.53 WOOD BLOCK FLOORS, BUILDING 128 (AOC MISC 1)

This section presents a description of Building 128 and its wood block floors (AOC MISC 1), associated operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

During a site walk with regulatory agencies on 15 April 1998, it appeared that several other areas of the Building 128 floors (non-wood) might also have been impacted from various Building 128 activities. These following three areas were added to this AOC:

- Surface soil sample beneath a cooling platform in the north central portion of Building 128 (this soil appeared wet during the 15 April 1998 site walk);
- Three aboveground tanks in the northwestern portion of Building 128; and
- A piece of machinery in the western part of Building 128 where oil had recently leaked.

4.53.1 Site Description

Table 4.53-1 summarizes the location and characteristics of AOC MISC 1. A site map is provided as Figure 4.53-1. Site photographs are shown in Figures 4.53-2 through 4.53-5.

Table 4.53-1
AOC MISC 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 1	Throughout the central and northeastern portions of Building 128 (see Figure 4.53-1).	C- to F-28 to -30	Wood blocks (approximately 8 inches long by 4 inches wide by 4 inches thick) composing the floor surface of work areas.	Wood block floors underlain by concrete.	Approximately 35,000 square feet of wood block flooring.
	North central portion of Building 128.	D-29	Wet surface soil beneath cooling platform.	Metal cooling platform.	Approximately 25 feet by 25 feet.
	Northwestern portion of Building 128.	D-28	Boiler parts cleaning tanks: One vapor degreasing tank, one rinse water tank, and one caustic soda tank.	Three aboveground process tanks.	Maximum capacities of 3370, 2626, and 2626 gallons, respectively.
	Western portion of Building 128.	D-28	Oil leak from machinery onto concrete floor.	Punch shearing machine.	Leak: 8 square feet.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Building 128 was built in 1945 to increase workspace for manufacturing activities at LBNSY. It housed the materials and machinery to fabricate, assemble, and install such parts as

structural members of ships. Building 128 was used for heavy metal working operations that included welding, quenching, and foundry work.

As part of the January 1998 site reconnaissance, Building 128 wood block floors were observed to be located throughout the central and northeastern portions of the building in work areas where activities required workers to stand (see Figure 4.53-1). Concrete, metal grating, and soil floors were observed at other areas of Building 128. Dark stains in the wood blocks were observed at numerous locations throughout the building. A total of 21 wood blocks were lifted at various locations to observe the surface beneath; in each case, concrete was observed beneath the wood blocks. Figure 4.53-1 shows the locations where wood blocks were lifted. The wood blocks generally appeared to have been treated with a creosote-type material.

The cooling platform, approximately 25 feet by 25 feet by 3 feet high (Figure 4.53-2), was observed to be located west of the dirt floor forging/heat treatment area in the north central portion of Building 128. Soil beneath this platform contained small pieces of metal and appeared wet.

Three aboveground cleaning tanks in the northwestern portion of Building 128 were observed to be surrounded by a 12-inch high concrete berm. The floor inside the berm was also made of concrete. One tank had a capacity of 3370 gallons, while the other two had a capacity of 2626 gallons. All tanks had been cleaned and closed according to Navy procedures and all three tanks were no longer in use at the time of the 15 April 1998 site reconnaissance.

Along the western wall inside of Building 128 in a small room, a punch shearing machine was located. Oil that appeared to have leaked onto the concrete floor from this piece of machinery was observed during the 15 April 1998 site reconnaissance.

4.53.2 Operational History and Waste Characteristics

Table 4.53-2 summarizes the operational history and waste characteristics for AOC MISC 1.

Table 4.53-2
AOC MISC 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 1	1945 to 1996	Welding, metal cutting, fabricating, quenching, and storage of hazardous materials and waste.	Potential spills from Building 128 activities onto the wood block floors.	Unknown
	Unknown	Cooling metal parts that had been heat-treated.	Metals.	Unknown
	Pre-1969 to 1991	Boiler parts cleaning.	Potential spills or leaks of cleaning fluids including TCE and 1,1,1-TCA, caustic soda, and associated rinse water.	Unknown
	Unknown; leak appeared recent	Oil leak from punch shearing machine.	Oil potentially containing PCBs.	Unknown

AOC = Area of Concern
MISC = Miscellaneous
No. = Number
PCBs = Polychlorinated Biphenyls
TCA = Trichloroethane
TCE = Trichloroethylene

Building 128 wood block floors may have been impacted by various types and amounts of hazardous wastes generated during normal operations. Large-scale hydraulic equipment used in heavy metal working operations utilized oil products, such as lubricants and hydraulic fluids (that may have contained PCBs). Welding processes generated metal slag waste.

Small pieces of metal in the soil beneath the cooling platform indicate that metal wastes may have impacted soil in this area over an unknown period of time.

The exact dates of operation of the three cleaning tanks are not clear. Closure documentation attached to the tanks indicate that these tanks were in operation from 1975 to 1991, although historical documents indicate boiler parts cleaning tanks were located in this general area as early as 1969. The tanks were inspected bimonthly from 1978 to 1984 for leaks. No significant problems were noted, except for during one 1979 inspection when a leak at the circulating pump of the TCE tank was discovered and repaired. The volume or disposition of wastes was not recorded on the incident form attached to the tank. The closure documentation attached to the tanks during the 15 April 1998 site reconnaissance indicates that the largest of the three tanks formerly contained TCE and most recently contained 1,1,1-TCA used for vapor degreasing, while the other two tanks contained caustic soda and rinse water. Documents from 1969 and 1977 that identify boiler parts cleaning tanks in this general area of Building 128 refer to use of detergents and diesel oil in the cleaning process. Waste rinsewater was drained to the storm sewer system via a sump in the center of the bermed area, while waste sludge from the tanks was hauled away for offsite disposal approximately every 6 months.

4.53.3 Preliminary Assessment Resources

Resources used for the PA for this AOC are listed in Table 4.53-3.

Table 4.53-3
AOC MISC 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Study (IWS)	1969	Brown and Caldwell	Boiler parts cleaning tanks (2) in northwestern portion of Building 128.
Environmental Engineering Survey	1977	CDM Inc.	Boiler parts cleaning tanks (3) in northwestern portion of Building 128.
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	General Building 128 operations information.
Final Environmental Baseline Survey	1996	LBNSY-ED	General Building 128 operations information.
Closure Documentation	1997	LBNSY-ED	Tank acquisition forms, tank size information, incident reports.
Final 9 Group B AOCs Sampling Report	1998	CDM Federal	General Building 128 operations information.

AOC = Area of Concern MISC = Miscellaneous
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.53.4 PA Recommendations

Investigational sampling was originally recommended for AOC MISC 1 because stains were observed on the wood block floors. The regulatory agencies agreed during a 15 April 1998 site walk that soil and groundwater sampling would not be required beneath the wood block floors if concrete existed beneath the floors; on 28 April 1998, CDM Federal verified that concrete existed beneath the wood block floors, as described in Section 4.53-1. Therefore, only one wood block floor sample was recommended in the Work Plan (CDM Federal 1998a) to assess whether the wood would be considered a hazardous waste if it were to be removed.

During a site walk with regulatory agencies on 15 April 1998, it appeared that three other areas of the Building 128 floors (non-wood) might also have been impacted from various Building 128 activities. These three areas were also recommended for sampling.

4.53.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), one wood block sample, one surface soil sample, one liquid sample, and one PCB wipe sample were collected in Building 128. Samples were collected at these AOC MISC 1 locations from 16 June to 18 June 1998. Two soil and two groundwater samples were collected on 5 and 8 March 1999.

Sample locations are shown in Figure 4.53-6. Samples were analyzed for the analytical categories indicated in Table 4.53-4. The soil, wood block, and PCB wipe samples were collected at ground surface. The liquid sample was collected at a depth of one foot beneath the floor surface. The subsurface soil samples were collected at 2 feet bgs, while the groundwater samples were collected at approximately 11 feet bgs.

The following samples were collected:

- One stained wood block sample from the center of Building 128;
- One surface soil sample beneath a cooling platform in the north central portion of Building 128 (this soil appeared wet during the 15 April 1998 site walk);
- One liquid sample from standing liquid in a sump between the three cleaning tanks in the northwestern part of Building 128, as well as two soil and two groundwater samples to the north and east of these tanks (expected to be hyrdaulically downgradient);
- Two soil and two groundwater samples near the cleaning tanks in the northwestern portion of Building 128. One sampling location was five feet south of the tanks, while the other sampling location was eight feet northeast of the tanks (expected to be hyrdaulically downgradient); and
- One PCB wipe sample on a concrete surface from an area in the western part of Building 128 where oil had recently leaked from a machine.

Table 4.53-4
AOC MISC 1 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	PCBs	pH	CN	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	Cr^{+6}
Wood Block	1	1	1	1	0	1	1	1	1	0
Surface Soil, Platform Area	1	1	1	1	0	0	1	1	1	0
Liquid, Dip Tanks	1	1	1 [(a)]	1	1	1	1	1	1	1
Soil – Dip Tanks	2	0	2	0	0	0	0	0	0	0
Groundwater, Dip Tanks	2	0	2 [(a)]	0	0	0	0	0	0	0
PCB Wipe	0	0	0	1	0	0	0	0	0	0

Notes:

(a) Dissolved metals

AOC = Area of Concern
CN = Cyanide
Cr^{+6} = Hexavalent Chromium
MISC = Miscellaneous
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.53.6 Analytical Results

Analytical results for wood block floor, surface soil, liquid, subsurface soil, groundwater, and PCB wipe samples are discussed below. Organic analyte results are in Figure 4.53-7 and shown in Tables 4.53-5 to 4.53-9, while metals results are shown in Tables 4.53-10 to 4.53-13.

4.53.6.1 Wood Block Floor

VOCs, SVOCs, PCBs, TPH, and 15 of the 17 metals were detected in the wood block floor sample as indicated in Tables 4.53-5 and 4.53-10 and Figure 4.53-7. The VOCs detected included p-isopropyltoluene, naphthalene, and toluene. Seventeen SVOCs were detected.

4.53.6.2 Surface Soil

TPH-gasoline, TPH-diesel, TPH-motor oil, eleven SVOCs, and 15 of the 17 metals were detected in the surface soil sample collected beneath the cooling platform in the north central portion of Building 128 as indicated in Tables 4.53-6 and 4.53-11. The SVOCs detected include benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, BEHP, butyl benzyl phthalate, chrysene, di-n-butyl phthalate, fluoranthene, phenanthrene, and pyrene. VOCs and PCBs were not detected in the sample.

4.53.6.3 Liquid

Three VOCs, TPH-gasoline, TPH-diesel, TPH-motor oil, and 8 of the 17 metals were detected in the liquid sample as indicated on Tables 4.53-7 and 4.53-12, and Figure 4.53-7. The three VOCs detected were carbon tetrachloride, 1,1-dichloroethane, and 1,1,1-trichloroethane. SVOCs, PCBs, cyanide, and hexavalent chromium were not detected in the liquid sample.

4.53.6.4 Soil

VOCs were not detected in the two soil samples collected near the dip tanks at AOC MISC 1, while 14 of the 17 metals were detected, as indicated in Tables 4.53-8 and 4.53-13, respectively.

4.53.6.5 Groundwater

VOCs were not detected in the groundwater samples collected at AOC MISC 1, while nine of the 17 metals were detected in the groundwater samples, as indicated in Tables 4.53-8 and 4.53-13, respectively.

4.53.6.6 PCB Wipe

PCBs were not detected in the PCB wipe sample as indicated in Table 4.53-9.

4.53.7 Data Comparison to Screening Criteria

Analyte detections were compared to screening criteria for soil, liquid, wood block floors, PCB wipe, and water samples. The subsections below, Figure 4.53-7, and Tables 4.53-5 to 4.53-13 identify those analytes that exceeded criteria.

4.53.7.1 Wood Block

Chromium and lead were detected at 218J mg/kg and 281J mg/kg, respectively, which exceed the U.S. EPA RCRA 20-times-TCLP screening criteria. These two metals are below the State of California regulatory levels but may be considered hazardous because they are above the EPA 20-times-TCLP screening criteria. The TCLP test was not performed on the wood block sample, so it is not certain that chromium and lead regulatory criteria would be exceeded if the TCLP test were run.

4.53.7.2 Surface Soil

For organic compounds, no sample analyte results exceeded screening criteria. Benzo(a)pyrene exceeded the residential PRG but not the industrial PRG. Two metals, arsenic and chromium, exceeded both the industrial PRG and background level criteria. Antimony, copper, molybdenum, and nickel exceeded their respective residential PRGs, but not their industrial PRGs.

4.53.7.3 Liquid

No sample analyte results exceeded screening criteria.

4.53.7.4 Soil

No analytes were detected above screening criteria.

4.53.7.5 Groundwater

No analytes were detected above screening criteria.

4.53.7.6 PCB Wipe

No PCBs were detected.

4.53.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

TPH-gasoline results lower than approximately 0.3 mg/kg or 0.3 mg/L should be used with caution because false positives may have occurred, as described in Appendix O.

4.53.9 Recommendations

Further action is recommended for the soil beneath the cooling platform. No further action is recommended for the wood block floors, the equipment leak (where a PCB wipe sample was collected), and the dip tanks area.

No further action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall.

Based on sampling results, the wood block floors could be considered a hazardous waste (for disposal purposes) if removed from their current location.

At the time of conveyance, the Department of the Navy (DoN) will provide the transferee with all information gathered on the AOCs. It is the responsibility of the transferee to determine the appropriate handling and disposal of soil or other media removed from any AOC at the former Long Beach Naval Complex. The DoN is not in a position to provide assurances that the new owner will comply with all applicable state and federal regulations at all Areas of Concern. The enforcement of state or federal laws and regulations dealing with hazardous wastes is the responsibility of those state and federal agencies given such authority.

Table 4.53-5
AOC MISC 1 Sampling Results Summary for Organic Compounds (Wood Block)
June 1998

WOOD BLOCK (98SY-M1Wa-B-0)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]						
p-Isopropyltoluene	1	1	5J	NA	NA	0
Naphthalene	1	1	58J	NA	NA	0
Toluene	1	1	0.51J	NA	NA	0
SVOCs (64 analytes)[b]						
Acenaphthene	1	1	63	NA	NA	0
Acenapthylene	1	1	3.2J	NA	NA	0
Anthracene	1	1	81	NA	NA	0
Benz(a)anthracene	1	1	130	NA	NA	0
Benzo(a)pyrene	1	1	82J	NA	NA	0
Benzo(b)fluoranthene	1	1	100J	NA	NA	0
Benzo(k)fluoranthene	1	1	170J	NA	NA	0
Chrysene	1	1	83	NA	NA	0
Dibenz(a,h)anthracene	1	1	6.9J	NA	NA	0
Dibenzofuran	1	1	42.8	NA	NA	0
Fluoranthene	1	1	300	NA	NA	0
Fluorene	1	1	44.4	NA	NA	0
Indeno(1,2,3-cd)pyrene	1	1	21J	NA	NA	0
2-Methylnaphthalene	1	1	20J	NA	NA	0
Naphthalene	1	1	38.2	NA	NA	0
Phenanthrene	1	1	450	NA	NA	0
Pyrene	1	1	277	NA	NA	0
PCBs[b]						
Aroclor 1260	1	1	0.98J	50	500[d]	0
TPH-Gasoline	1	1	8,400[c]	NA	NA	0
TPH-Diesel	1	1	41,000J	NA	NA	0
TPH-Motor Oil	1	1	62,000J	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.
(b) If not listed in this table, the remaining analytes were not detected.
(c) Not a typical gasoline pattern; sample contained high concentration of Method 8260 VOCs
(d) From TSCA (40 CFR 761).

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds Biphenyls
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.53-6
AOC MISC 1 Platform Sampling Results Summary for Organic Compounds (Surface Soil)
June 1998

SURFACE SOIL (98SY-M1Pa-S-0)								
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**State of California Regulatory Levels[d] (mg/kg)**	**U.S. EPA RCRA Criteria [d] (mg/kg)**	**No. of Detections Exceeding State or Federal Criteria**
VOCs (60 analytes)	1	0	ND	N/A	0	NA	NA	0
SVOCs (64 analytes)[b]								
Benz(a)anthracene	1	1	0.25J	3.6	0	NA	NA	0
Benzo(a)pyrene	1	1	0.23J	0.36	0	NA	NA	0
Benzo(b)fluoranthene	1	1	0.47J	3.6	0	NA	NA	0
Benzo(k)fluoranthene	1	1	0.17J	36	0	NA	NA	0
Bis(2-ethylhexyl)phthalate	1	1	4.1J	210	0	NA	NA	0
Butyl benzyl phthalate	1	1	0.21J	930	0	NA	NA	0
Chrysene	1	1	0.533J	360	0	NA	NA	0
Di-n-butyl phthalate	1	1	0.13J	110,000	0	NA	NA	0
Fluoranthene	1	1	0.903J	37,000	0	NA	NA	0
Phenanthrene	1	1	0.3J	NA	0	NA	NA	0
Pyrene	1	1	0.598J	26,000	0	NA	NA	0
PCBs	1	0	ND	1.3	0	50	500	0
TPH-Gasoline	1	1	0.09J	1,000[c]	0	NA	NA	0
TPH-Diesel	1	1	75	10,000[c]	0	NA	NA	0
TPH-Motor Oil	1	1	420	50,000[c]	0	NA	NA	0

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) If not listed in this table, the remaining analytes were not detected.
(c) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(d) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used

AOC = Area of Concern
J = Estimated Concentration
MISC = Miscellaneous
mg/kg = Milligrams Per Kilogram
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Table 4.53-7
AOC MISC 1 Sampling Results Summary for Organic Compounds (Liquid)
June 1998

LIQUID (98SY-M1Da-L-5)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**State of California Regulatory Levels[a] (mg/L)**	**U.S. EPA RCRA Criteria[a] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]						
Carbon tetrachloride	1	1	0.037J	NA	0.5	0
1,1-Dichloroethane	1	1	0.94J	NA	NA	0
1,1,1-Trichloroethane	1	1	0.3J	NA	NA	0
SVOCs (64 analytes)[b]	1	0	ND	N/A	N/A	0
PCBs	1	0	ND	5	50[c]	0
TPH-Gasoline	1	1	0.11J	NA	NA	0
TPH-Diesel	1	1	0.8	NA	NA	0
TPH-Motor Oil	1	1	0.2J	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria.
(b) If not listed in this table, the remaining analytes were not detected.
(c) From Toxic Substances Control Act (TSCA) (40 Code of Federal Regulations [CFR] 761) - PCB Spill Cleanup Policy.

AOC = Area of Concern
J = Estimated Concentration
mg/L = Milligrams Per Liter
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.53-8
AOC MISC 1 Dip Tank Area Sampling Results Summary for Organic Compounds
March 1999

	SOIL (99SY-M1Db-S-2 and 99SY-M1Dc-S-2)					GROUNDWATER (99SY-M1Db-W-11 and 99SY-M1Dc-W-10.8)				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)	2	0	ND	N/A	0	2	0	ND	N/A	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
MISC = Miscellaneous
No. = Number
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.53-9
AOC MISC 1 Sampling Results Summary for Organic Compounds (PCB Wipe)
June 1998

PCB WIPE (98SY-PC2a-P-0)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration ($\mu g/100cm^2$)**	**State of California Regulatory Levels ($\mu g/100cm^2$)**	**U.S. EPA RCRA Criteria ($\mu g/100cm^2$)**	**No. of Detections above Criteria**
PCBs	1	0	ND	NA	10[(a)]	0

Notes:

(a) Low contact indoor surfaces per 40 CFR 761 (IV) (C) (2) b and c.

AOC = Area of Concern
CFR = Code of Federal Regulations
cm^2 = Centimeters squared
MISC = Miscellaneous
NA = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency
μg = Micrograms

Table 4.53-10
AOC MISC 1 Sampling Results Summary for Inorganic Compounds (Wood Block)
June 1998

WOOD BLOCK (98SY-M1Wa-B-0)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections Exceeding State or Federal Criteria**
Antimony	1	1	8.2J	500	NA	0
Arsenic	1	1	2.5	500	100	0
Barium	1	1	50.4	10,000	2,000	0
Beryllium	1	0	ND	75	NA	0
Cadmium	1	1	9.7	100	20	0
Chromium	1	1	**218J**	2,500	100	1
Cobalt	1	1	5.1J	8,000	NA	0
Copper	1	1	455	2,500	NA	0
Lead	1	1	**281J**	1,000	100	1
Mercury	1	1	0.26	20	4	0
Molybdenum	1	1	8.3	3,500	NA	0
Nickel	1	1	99.2	2,000	NA	0
Selenium	1	1	0.48	100	20	0
Silver	1	1	3.2J	500	100	0
Thallium	1	0	ND	700	N/A	0
Vanadium	1	1	6.7	2,400	NA	0
Zinc	1	1	1,050J	5,000	NA	0
Cyanide	1	0	ND	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times rule for solids.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency

Table 4.53-11
AOC MISC 1 Platform Sampling Results Summary for Metals (Surface Soil)
June 1998

SURFACE SOIL (98SY-M1Pa-S-0)									
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Criteria	State of California Regulatory Levels[c] (mg/kg)	U.S. EPA RCRA Criteria[c] (mg/kg)	No. of Detections Exceeding State or Federal Criteria
Antimony	1	1	71.0	750	11.3	0	500	NA	0
Arsenic	1	1	**18.0**	3.0	17.5	1	500	100	0
Barium	1	1	142	100,000	275	0	10,000	2,000	0
Beryllium	1	0	ND	3,400	1.4	0	75	NA	0
Cadmium	1	1	4.5	930	1.7	0	100	20	0
Chromium	1	1	**5,890**	450	60.9	1	2,500	100	1
Cobalt	1	1	80.7	29,000	24.5	0	8,000	NA	0
Copper	1	1	20,000	70,000	798.7	0	2,500	NA	0
Lead	1	1	141	1,000	185.2	0	1,000	100	0
Mercury	1	1	0.12	560	2.5	0	20	4	0
Molybdenum	1	1	537	9,400	NA	0	3,500	NA	0
Nickel	1	1	9,170J	37,000	32.6	0	2,000	NA	0
Selenium	1	1	2.5	9,400	1.4	0	100	20	0
Silver	1	1	9.2	9,400	1.5	0	500	100	0
Thallium	1	0	ND	150	4.2	0	700	N/A	0
Vanadium	1	1	53.7	13,000	84.9	0	2,400	NA	0
Zinc	1	1	1,590	100,000	844.9	0	5,000	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

Table 4.53-12
AOC MISC 1 Sampling Results Summary for Inorganic Compounds (Liquid)
June 1998

LIQUID (98SY-M1Da-L-5)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**State of California Regulatory Levels[a] (mg/L)**	**U.S. EPA RCRA Criteria[a] (mg/L)**	**No. of Detections above Criteria**
Antimony	1	0	ND	15	NA	0
Arsenic	1	1	0.0017J	5	5	0
Barium	1	0	ND	100	100	0
Beryllium	1	0	ND	0.75	NA	0
Cadmium	1	0	ND	1	1	0
Chromium	1	1	0.0146	5	5	0
Cobalt	1	0	ND	80	NA	0
Copper	1	0	ND	25	NA	0
Lead	1	1	0.0050J	5	5	0
Mercury	1	1	0.00018J	0.2	0.2	0
Molybdenum	1	1	0.131	350	NA	0
Nickel	1	1	0.128	20	NA	0
Selenium	1	1	0.0039J	1	1	0
Silver	1	0	ND	5	5	0
Thallium	1	0	ND	7	NA	0
Vanadium	1	1	0.0101	24	NA	0
Zinc	1	0	ND	250	NA	0
Cr^{+6}	1	0	ND	5	NA	0
Cyanide	1	0	ND	N/A	N/A	0
pH	1	1	7.12 (pH units)	2 to 12.5 (pH units)	2 to 12.5 (pH units)	0

Notes:

(a) See Section 3.7 for sources of criteria.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
MISC = Miscellaneous
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency

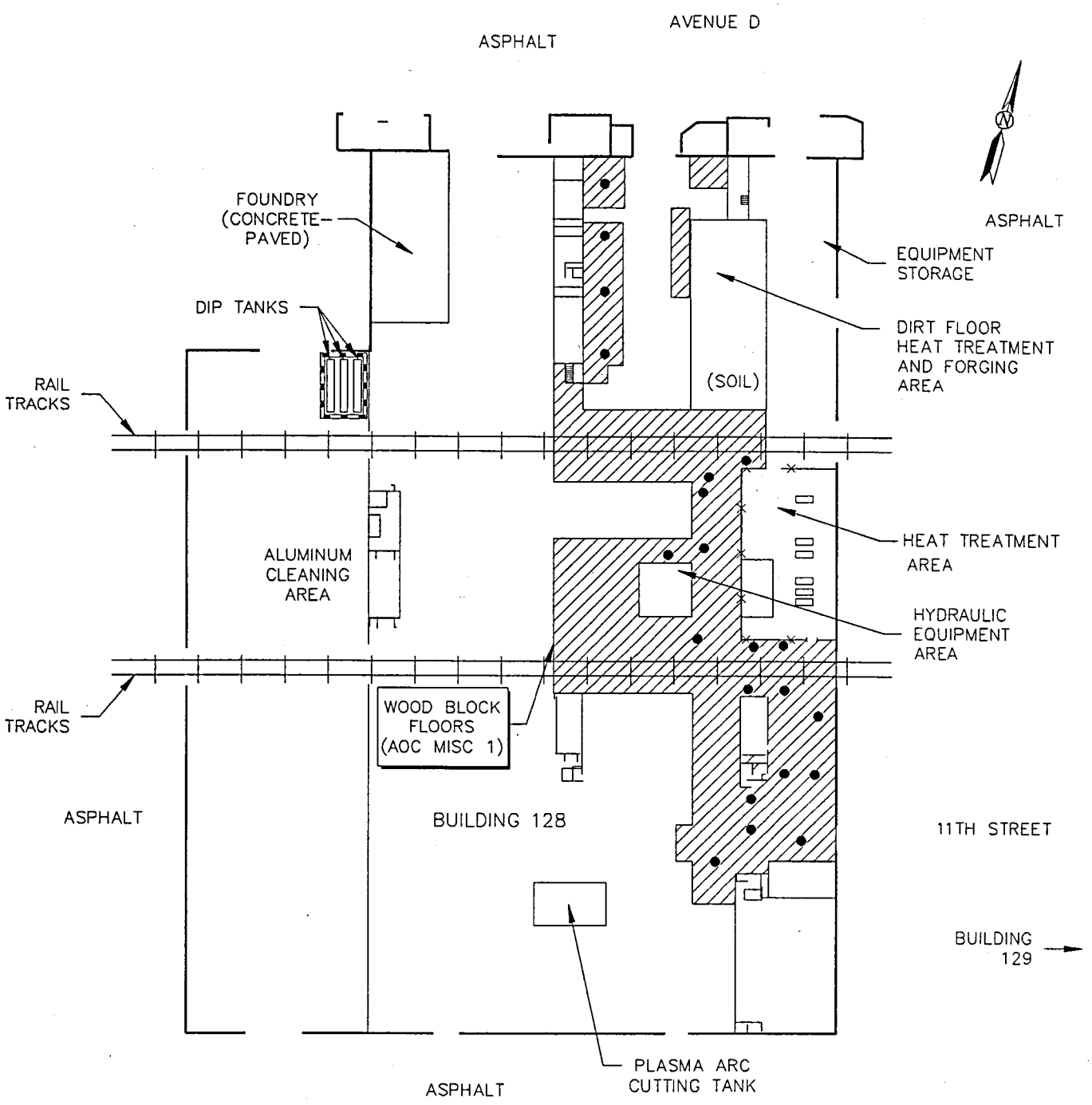
Table 4.53-13
AOC MISC 1 Sampling Results Summary for Metals
March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	2	0.49, 0.38J	750	11.3	0
Arsenic	2	2	1.5, 2.3	3.0	17.5	0
Barium	2	2	89.2, 60.2	100,000	275	0
Beryllium	2	0	ND	3,400	1.4	0
Cadmium	2	1	0.057J	930	1.7	0
Chromium	2	2	24.6, 11.2	450	60.9	0
Cobalt	2	2	6.9, 5.7	29,000	24.5	0
Copper	2	2	16.1, 9.7	70,000	798.7	0
Lead	2	2	4.6J, 1.4	1000	185.2	0
Mercury	2	2	0.021, 0.048J	560	2.5	0
Molybdenum	2	1	3.4	9,400	NA	0
Nickel	2	2	11.4, 7.7	37,000	32.6	0
Selenium	2	1	0.61J	9,400	1.4	0
Silver	2	0	ND	9,400	1.5	0
Thallium	2	0	ND	150	4.2	0
Vanadium	2	2	20.8, 23.8	13,000	84.9	0
Zinc	2	2	35.0, 30.4	100,000	844.9	0
GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	0	ND	1.2	0.0616	0
Arsenic	2	0	ND	0.008	0.0276	0
Barium	2	2	0.207J, 0.191J	1[d]	0.1777	0
Beryllium	2	0	ND	3.3×10^{-3}	0.002	0
Cadmium	2	0	ND	0.001	0.0017	0
Chromium	2	1	0.0103	190	0.0029	0
Cobalt	2	0	ND	2.2[d]	0.0071	0
Copper	2	1	0.0118	0.003	0.1072	0
Lead	2	0	ND	0.002	0.028	0
Mercury	2	0	ND	4.0×10^{-5}	0.0009	0
Molybdenum	2	2	0.0221J, 0.0354J	0.18[d]	NA	0
Nickel	2	1	0.0126J	0.005	0.0958	0
Selenium	2	1	0.0024J	0.015	0.040	0
Silver	2	0	ND	0.0007	0.0072	0
Thallium	2	0	ND	0.014	0.0075	0
Vanadium	2	1	0.0178	0.26[d]	0.0107	0
Zinc	2	2	0.0395, 0.0142	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
MISC = Miscellaneous
mg/L = Milligrams Per Liter
NA = Not available
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LEGEND

- ● = CONCRETE OBSERVED BELOW WOOD BLOCK FLOOR (28 APRIL 1998)
- ▨ = WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)
- AOC = AREA OF CONCERN
- MISC = MISCELLANEOUS
- ▬ = CONCRETE BERM

0 50 100
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC MISC 1 WOOD BLOCK FLOORS BUILDING 128	FIGURE 4.53-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.53-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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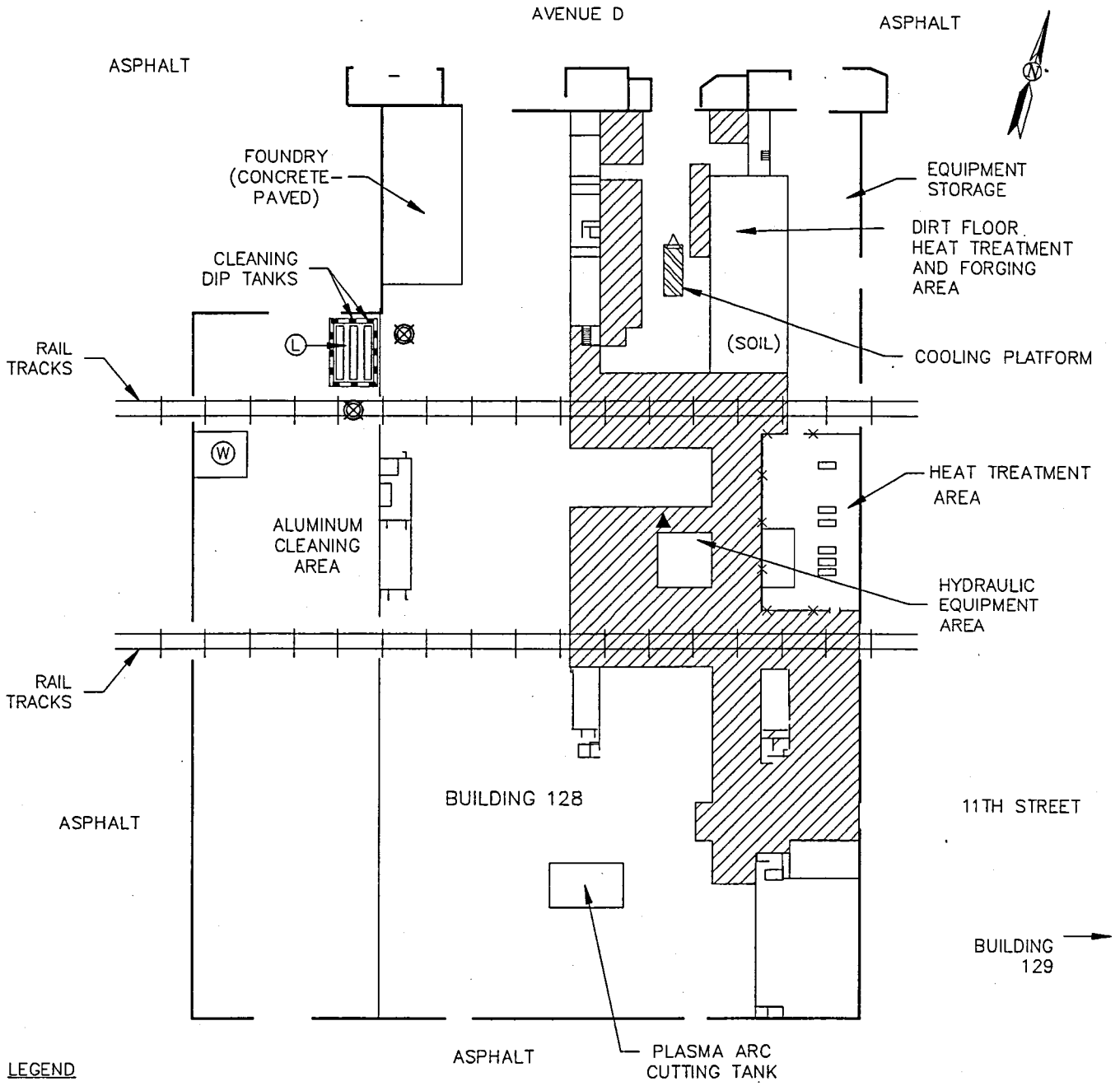
Figure 4.53-2 Wet Soil beneath Metal Cooling Platform, (AOC MISC 1), Facing Southeast 5/28/98

Figure 4.53-3 Cleaning Tanks in Building 128 (Northwest corner) (AOC MISC 1), Facing North 12/14/98

Figure 4.53-4 Stained Wood Blocks in Building 128 (AOC MISC 1), Facing down 6/17/98

Figure 4.53-5 Machinery Leaking Fluid, Building 128 (AOC MISC 1), Facing Southwest 6/17/98



LEGEND

- ⊗ = SOIL AND GROUNDWATER SAMPLE LOCATION
- Ⓛ = LIQUID SAMPLE LOCATION
- Ⓦ = WIPE SAMPLE LOCATION
- ▲ = WOOD BLOCK SAMPLE LOCATION
- △ = SOIL SAMPLE LOCATION
- ▨ = WOOD BLOCK FLOOR AREA
- ▧ = COOLING PLATFORM
- ▬ = CONCRETE BERM

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS

0 25 50 75 100
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 1 SAMPLING LOCATIONS BUILDING 128	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.53-6	GROUP B AREAS OF CONCERN	4.53-6
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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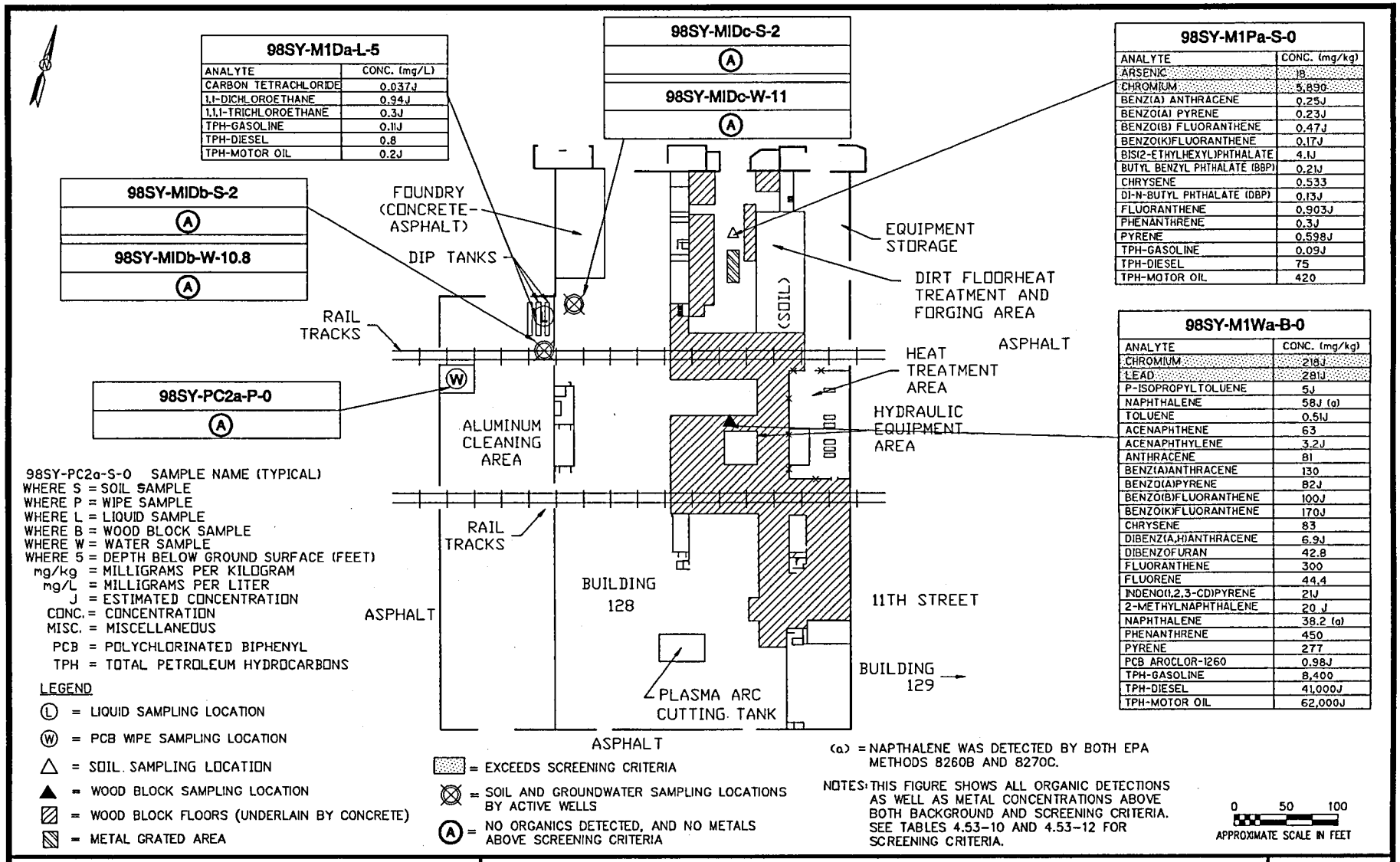

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.53-7
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLE RESULTS SUMMARY, JUNE 1998 AND MARCH 1999
AOC MISC 1
BUILDING 128
GROUP B AREAS OF CONCERN

FIGURE
4.53-7

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.53-23

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4.54 WOOD BLOCK FLOORS, BUILDING 129 (AOC MISC 2)

This section presents a description of Building 129 and its wood block floors (AOC MISC 2), associated operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.54.1 Site Description

Table 4.54-1 summarizes the location and characteristics of AOC MISC 2. A site map is provided as Figure 4.54-1. Site photographs are shown in Figures 4.54-2 and 4.54-3.

Table 4.54-1
AOC MISC 2 Site Descriptions

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 2	Building 129, 1st floor: engine overhaul area, heavy equipment repair, and machinist work area	D-30, D-31, E-30, E-31	Wood blocks (approximately 8 inches long by 4 inches wide by 4 inches thick) composing the floor surface of the majority of Building 129.	Wood block floors underlain by concrete.	Approximately 50,000 square feet of wood block flooring.

AOC = Area of Concern MISC = Miscellaneous No. = Number

As part of a January 1998 site reconnaissance, Building 129 wood block floors were observed to be located throughout the central and eastern portion of the building in work areas where activities required workers to stand (see Figure 4.54-1). Many wood block floor areas appeared to be stained; in some cases, oily stains were difficult to distinguish from the dark brown wood blocks. To assess site conditions beneath the wood blocks, 21 wood blocks were lifted at various locations (see Figure 4.54-1). In each case, concrete was observed beneath the wood blocks. The wood blocks generally appeared to have been treated with a creosote-type material.

4.54.2 Operational History and Waste Characteristics

Table 4.54-2 summarizes the operational history and waste characteristics for AOC MISC 2.

Table 4.54-2
AOC MISC 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 2	1940 to 1996	Machining services, propulsion component overhaul, and repair and testing of pumps, valves, turbines, propellers, shafts, and other components.	Potential spills (hydraulic oil, waste oils, greases, degreasers and solvents) from Building 129 activities onto the wood block floors.	Unknown.

AOC = Area of Concern MISC = Miscellaneous No. = Number

From 1940 to 1973, Building 129 was used as the Electrical Shop (Shop 51) and the Weapons Shop (Shop 36). These operations generated waste oils, greases, and degreasers and solvents that had been used for degreasing and paint removal. During this time, spills from process tanks, overflow from waste trenches, and trench-cleaning activities inside Building 129 may have impacted the wood block floors.

In the mid-1970s, Building 129 was used as a Machinist Shop (Shop 38) consisting of the following three major operations: a diesel shop, a transmission shop, and a winch shop (NEESA 1990). These operations involved machining services, propulsion component overhaul, and repair and testing of pumps, valves, turbines, propellers, shafts, and other components. Lubricating oils, cleaning solvents, and oily absorbent pads were the major wastes generated from these operations.

4.54.3 Preliminary Assessment Resources

Resources used for the PA for this AOC are listed in Table 4.54-3.

Table 4.54-3
AOC MISC 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	Building 129 hazardous materials usage and waste storage.
Final Environmental Baseline Survey	1996	LBNSY-ED	General Building 129 information.
Final 9 Group B AOCs Sampling Report	1998	CDM Federal	General Building 129 operations information.

AOC = Area of Concern MISC = Miscellaneous
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.54.4 PA Recommendations

Investigational sampling was recommended for AOC MISC 2 based on the activities, likelihood of spills, and visual staining observed on the wood block floors. The regulatory agencies agreed during a 15 April 1998 site walk that soil and groundwater sampling would not be required beneath the wood block floors if concrete existed beneath the floors. On 28 April 1998, CDM Federal verified that concrete existed beneath the wood block floors, as described in Section 4.54-1. Therefore, only one wood block floor sample was recommended for sampling in the Work Plan (CDM Federal 1998a) to assess whether the wood would be considered a hazardous waste if it were to be removed.

4.54.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), one wood block sample was collected at AOC MISC 2 on 18 June 1998. The sample was analyzed for the analytical categories indicated in Table 4.54-4. The wood block sample was collected near the center of Building 129 on the ground floor in an area where wood blocks were stained with oil. Figure 4.54-4 shows the wood block sampling location and Figure 4.54-5 shows sampling results.

Table 4.54-4
AOC MISC 2 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	PCBs	CN	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil
Wood Block	1	1	1	1	1	1	1	1

AOC = Area of Concern
CN = Cyanide
MISC = Miscellaneous
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.54.6 Analytical Results

Analytical results are discussed below for the wood block sample. Sample results for organic compounds and cyanide are shown in Table 4.54-5, while sample results for metals are shown in Table 4.54-6.

VOCs, SVOCs, PCBs, TPH-gasoline, TPH-diesel, TPH-motor oil, and 15 of the 17 metals were detected in the wood block sample, as shown in Table 4.54-5. Cyanide and 2 of 17 metals analyzed were not detected in the sample. Organic detections and metals that exceeded screening criteria are shown in Figure 4.54-5.

4.54.7 Data Comparison to Screening Criteria

No analytes exceeded the screening criteria for hazardous waste characterization.

4.54.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

Only one wood block sample was used to characterize the entire wood block floor area inside Building 129. Although this stained wood block sample was not characterized as hazardous, one sample may not be representative of all wood blocks inside Building 129.

4.54.9 Recommendations

No further action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall.

Based on sampling results, the wood block floors could be considered a hazardous waste (for disposal purposes) if removed from their current location.

At the time of conveyance, the Department of the Navy (DoN) will provide the transferee with all information gathered on the AOCs. It is the responsibility of the transferee to determine the appropriate handling and disposal of soil or other media removed from any AOC at the former Long Beach Naval Complex. The DoN is not in a position to provide assurances that the new owner will comply with all applicable state and federal regulations at all Areas of Concern. The enforcement of state or federal laws and regulations dealing with hazardous wastes is the responsibility of those state and federal agencies given such authority.

Table 4.54-5
AOC MISC 2 Sampling Results Summary for Organic Compounds (Wood Block)
June 1998

WOOD BLOCK						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]						
p-Isopropyltoluene	1	1	0.45J	NA	NA	0
Naphthalene	1	1	3.1J	NA	NA	0
Tetrachloroethene	1	1	0.18J	NA	NA	0
1,2,4-Trimethylbenzene	1	1	1.0J	NA	NA	0
1,3,5-Trimethylbenzene	1	1	0.56J	NA	NA	0
SVOCs (64 analytes)[b]						
Acenaphthene	1	1	13J	NA	NA	0
4-Aminobiphenyl	1	1	3.5J	NA	NA	0
Anthracene	1	1	43	NA	NA	0
Benzo(a)pyrene	1	1	31J	NA	NA	0
Benzo(g,h,i)perylene	1	1	28J	NA	NA	0
Benzo(k)fluoranthene	1	1	110J	NA	NA	0
Bis(2-ethylhexyl)phthalate	1	1	67	NA	NA	0
Chrysene	1	1	58J	NA	NA	0
Di-n-butyl phthalate (DBP)	1	1	6.9J	NA	NA	0
Dibenz(a,h)anthracene	1	1	24.9J	NA	NA	0
Dibenz(a,j)acridine	1	1	2.3J	NA	NA	0
2,4-Dimethylphenol	1	1	33	NA	NA	0
Fluoranthene	1	1	212	NA	NA	0
Fluorene	1	1	19	NA	NA	0
3/4-Methylphenol (m/p-Cresol)	1	1	55	NA	4,000	0
2-Methylphenol(o-Cresol)	1	1	28	NA	4,000	0
Naphthalene	1	1	2J	NA	NA	0
Phenanthrene	1	1	253	NA	NA	0
Phenol	1	1	37	NA	NA	0
Pyrene	1	1	255	NA	NA	0
PCBs[b]						
Aroclor 1260	1	1	2.0J	50	500	0
TPH-Gasoline	1	1	2J[c]	NA	NA	0
TPH-Diesel	1	1	35,000J[d]	NA	NA	0
TPH-Motor Oil	1	1	230,000J[d]	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leachate procedure (TCLP) criteria used.
(b) If not listed in this table, the remaining analytes were not detected.
(c) Not a typical gasoline pattern, sample contained high concentration of 8260 analytes.
(d) Mixture of compound in diesel/motor oil range.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

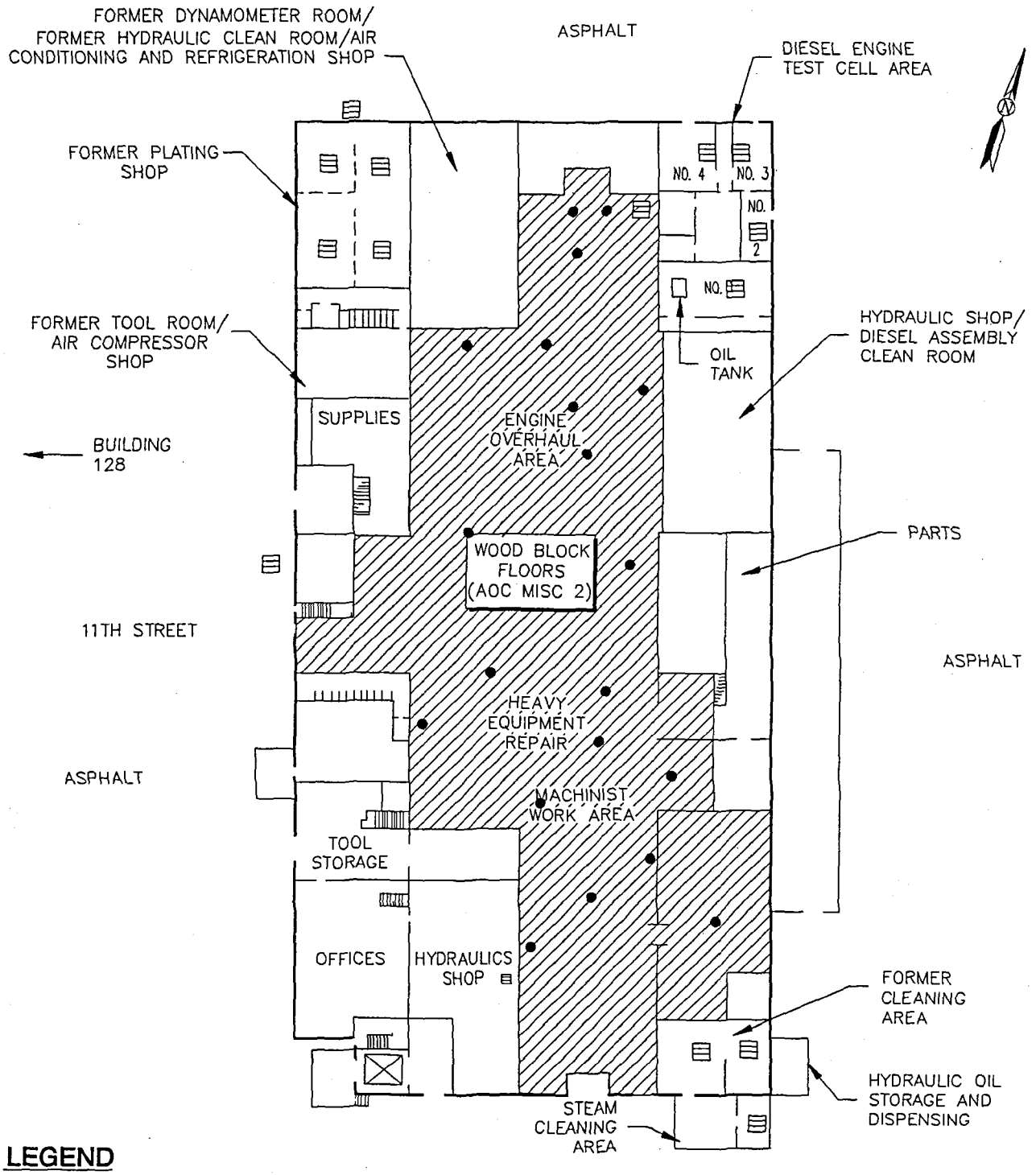
Table 4.54-6
AOC MISC 2 Sampling Results Summary for Inorganic Compounds (Wood Block)
June 1998

WOOD BLOCK						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
Antimony	1	1	1.2J	500	NA	0
Arsenic	1	1	0.14J	500	100	0
Barium	1	1	34.9	10,000	2,000	0
Beryllium	1	1	ND	75	N/A	0
Cadmium	1	1	17.3	100	20	0
Chromium	1	1	13.3J	2,500	100	0
Cobalt	1	1	1.6J	8,000	NA	0
Copper	1	1	111	2,500	NA	0
Lead	1	1	65.8J	1,000	100	0
Mercury	1	1	1.0	20	4	0
Molybdenum	1	1	3.7	3,500	NA	0
Nickel	1	1	8.5	2,000	NA	0
Selenium	1	0	ND	100	20	0
Silver	1	1	0.88J	500	100	0
Thallium	1	0	ND	700	N/A	0
Vanadium	1	1	3.1	2,400	NA	0
Zinc	1	1	201J	5,000	NA	0
Cyanide	1	0	ND	N/A	N/A	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leachate procedure (TCLP) criteria used

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency



LEGEND

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS
● = CONCRETE OBSERVED BELOW WOOD BLOCK FLOOR OBSERVED 28 APRIL 1998 (21 LOCATIONS)
▨ = WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)
▤ = SUMPS OR DRAINS

0 55
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 2 WOOD BLOCK FLOORS BUILDING 129	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.54-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	4.54-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

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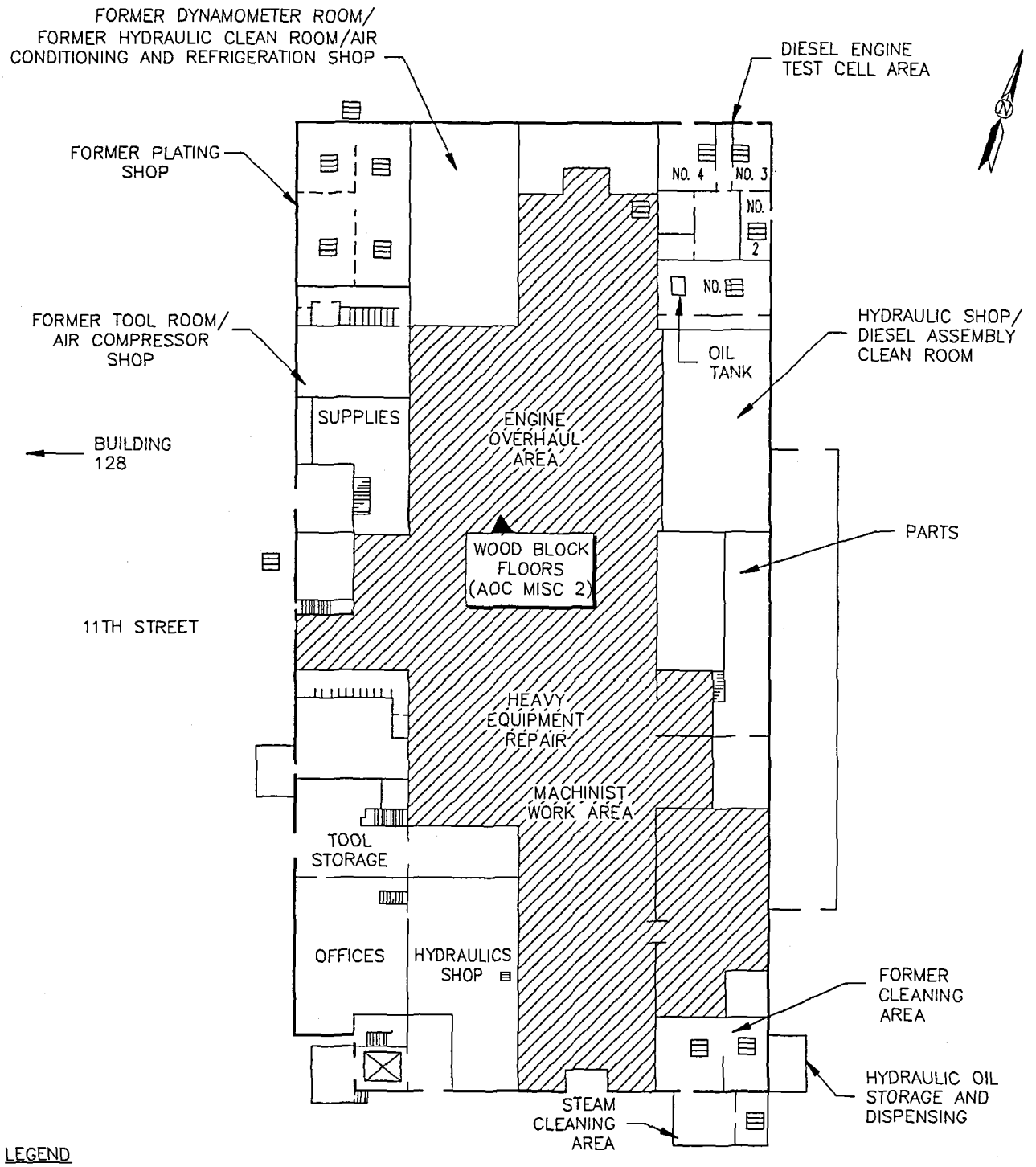
Figure 4.54-2 Wood Block Sample, Building 129 (AOC MISC 2), Facing Down 12/15/98

Figure 4.54-3 Wood Block Flooring, Building 129 (AOC MISC 2), Facing North 12/15/98



LEGEND

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS
▲ = WOOD BLOCK SAMPLING LOCATION
▨ = WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)
⊟ = SUMPS OR DRAINS

0 55
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC MISC 2 BUILDING 129 GROUP B AREAS OF CONCERN	FIGURE 4.54-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.54-4		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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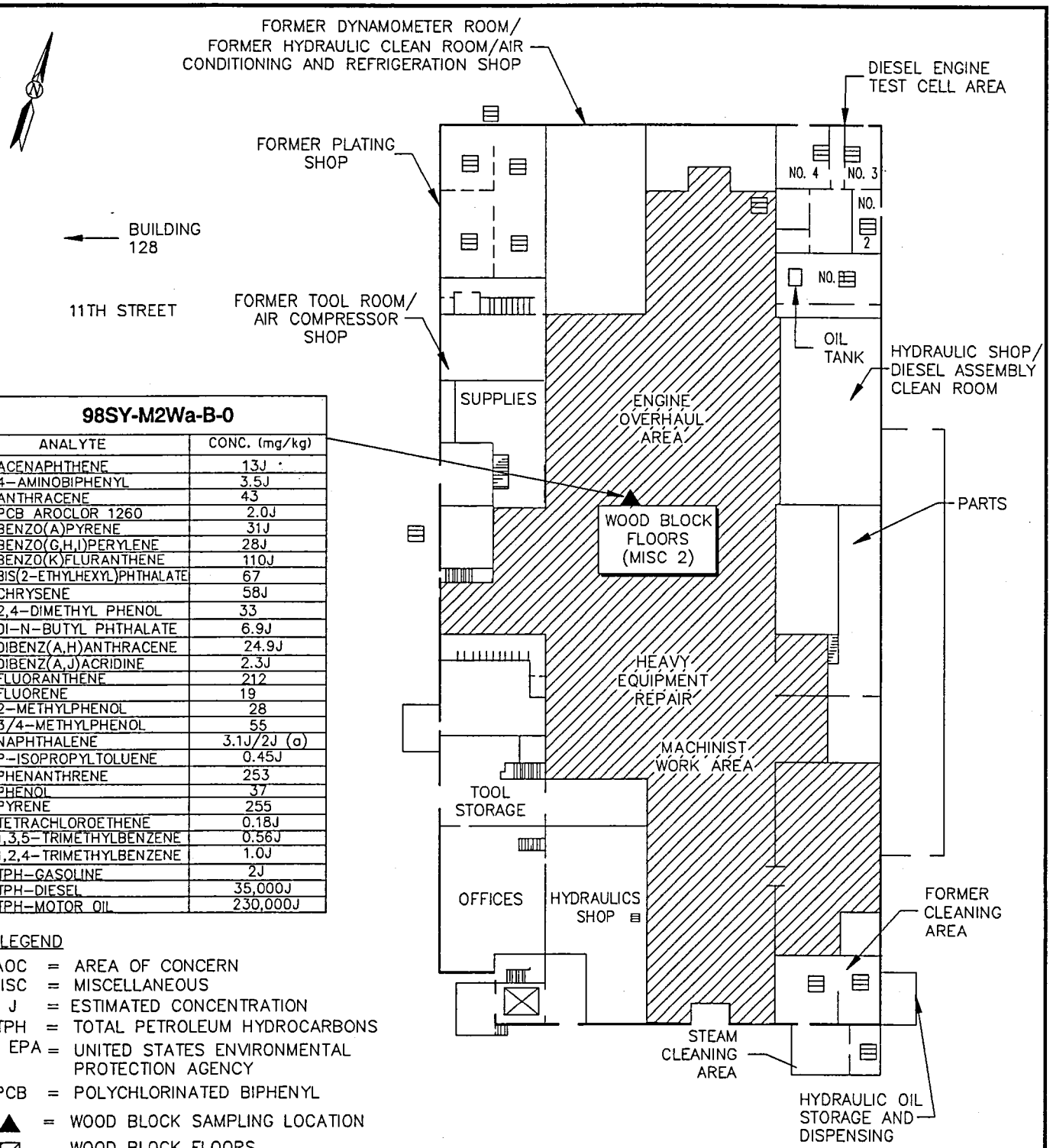

98SY-M2Wa-B-0	
ANALYTE	CONC. (mg/kg)
ACENAPHTHENE	13J
4-AMINOBIPHENYL	3.5J
ANTHRACENE	43
PCB AROCLOR 1260	2.0J
BENZO(A)PYRENE	31J
BENZO(G,H,I)PERYLENE	28J
BENZO(K)FLURANTHENE	110J
BIS(2-ETHYLHEXYL)PHTHALATE	67
CHRYSENE	58J
2,4-DIMETHYL PHENOL	33
DI-N-BUTYL PHTHALATE	6.9J
DIBENZ(A,H)ANTHRACENE	24.9J
DIBENZ(A,J)ACRIDINE	2.3J
FLUORANTHENE	212
FLUORENE	19
2-METHYLPHENOL	28
3/4-METHYLPHENOL	55
NAPHTHALENE	3.1J/2J (a)
P-ISOPROPYLTOLUENE	0.45J
PHENANTHRENE	253
PHENOL	37
PYRENE	255
TETRACHLOROETHENE	0.18J
1,3,5-TRIMETHYLBENZENE	0.56J
1,2,4-TRIMETHYLBENZENE	1.0J
TPH-GASOLINE	2J
TPH-DIESEL	35,000J
TPH-MOTOR OIL	230,000J

LEGEND

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS
J = ESTIMATED CONCENTRATION
TPH = TOTAL PETROLEUM HYDROCARBONS
US EPA = UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PCB = POLYCHLORINATED BIPHENYL
▲ = WOOD BLOCK SAMPLING LOCATION
▨ = WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)
▤ = SUMPS OR DRAINS

98SY-M2Wa-B-0 = SAMPLE NAME
WHERE B = WOOD BLOCK SAMPLE
WHERE 0 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION

NOTES: ALL ORGANIC DETECTIONS ARE SHOWN; NONE EXCEEDED SCREENING CRITERIA. NO METALS CONCENTRATIONS EXCEEDED HAZARDOUS WASTE CRITERIA.

(a) = RESULTS BY US EPA METHODS 8260B AND 8270C, RESPECTIVELY.

0 50
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.54-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC MISC 2
BUILDING 129
GROUP B AREAS OF CONCERN

FIGURE
4.54-5

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4.55 CONCRETE BLOCK FLOORS, BUILDING 130 (AOC MISC 3)

A description of the concrete block floors at Building 130 (AOC MISC 3), associated operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.55.1 to 4.55.4.

4.55.1 Site Description

Table 4.55-1 summarizes the location and characteristics of AOC MISC 3. A site map is provided as Figure 4.55-1. Site photographs are shown in Figures 4.55-2 and 4.55-3.

Table 4.55-1
AOC MISC 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 3	Throughout Building 130.	H-29 to J-29, -30	Concrete blocks (approximately 8 inches long by 4 inches wide by 4 inches thick) composing the floor surface of work areas.	Concrete block floors.	Approximately 40,000 square feet of concrete block flooring.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Building 130 concrete block floors were inspected during the January and March 1998 site reconnaissances. The floor surface of Building 130 is composed of concrete blocks (not wood block floors as AOC MISC 3 was identified in the 1996 EBS). The concrete blocks are approximately 8 inches long by 4 inches wide by 4 inches thick; a concrete slab floor that was 4 to 8 inches thick was situated below the concrete blocks. Stains were observed on the concrete floors, which may indicate spills during Building 130 operations. Spill clean up stations were also observed at several locations throughout Building 130.

4.55.2 Operational History and Waste Characteristics

Table 4.55-2 summarizes the operational history and waste characteristics.

Table 4.55-2
AOC MISC 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 3	1945 to 1996	Fabrication and repair of ship heating, air-conditioning, and ventilation ductwork, and general sheet metal cutting and fabrication operations.	Potential for spillage of caustics, acids, oils, and hydraulic fluids used in Building 130 operations.	Unknown.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Since 1945, Building 130 was used for fabrication and repair of ship heating, air-conditioning, and ventilation ductwork, as well as general sheet metal cutting and fabrication operations (NEESA 1990). Building 130 housed the material and equipment for punching, forming, sawing, painting, welding, plating, and assembly of metals to 1/8-inch thick (NEESA 1983).

Hazardous materials and hazardous wastes associated with Building 130 operations included chromic acid, materials used for aluminum plating, caustic soda, PCBs, various solvents, and heavy metals. Shop 17, included in Building 130, was responsible for servicing ventilation equipment, which historically contained PCB-contaminated felt gaskets. Wastes managed in Building 130 included empty aerosol paint cans, lay out remover, lubricants and cutting oils, and oil and solvent-contaminated rags (DTSC 1989).

Two hazardous waste generating areas were identified during a 1969 Industrial Waste Study (Brown and Caldwell 1969). One source was a painting booth located at the southwest corner of Building 130. Approximately 960 gallons per month of wastewater containing Kelite (a coagulating aid, alkaline solution) was released to the sanitary sewer system. The second source included the plating shop, which is discussed in Section 4.70 of this report.

Two hazardous waste generating areas were identified during a 1991 Industrial Wastewater Discharge Study performed by SCS Engineers. One, a deburring machine located inside the southeastern corner of the building, was used to polish sheet metal parts prior to fabrication. This source was estimated to discharge approximately 2,000 gallons per year to the sanitary sewer system. Potential contaminants included metals, ethylene glycol, monobutyl ether, and detergents. The other area included a metal cutting saw located at the northeastern corner of the building. The saw had a 30-gallon sump containing cooling water (used to collect particles of metal during cutting operations) that was released to the sanitary sewer every 3 to 4 months. Potential contaminants included metals and cutting oils.

4.55.3 Preliminary Assessment Resources

Table 4.55-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.55-3
AOC MISC 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Study	1969	Brown and Caldwell	Industrial waste generating activities at Building 130.
Initial Assessment Study	1983	NEESA	General operations including wastes generated and stored at Building 130.
RCRA Facility Assessment	1989	DTSC	General operations including wastes generated and stored at Building 130.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 130 operations including processes and wastes generated.
Sampling and Analysis Plan, Industrial Wastewater Discharge Study	1991	SCS Engineers	Hazardous waste generation operations in Building 130 which discharge to the sanitary sewer system.
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	General Building 130 operations information.
Final Environmental Baseline Survey	1996	LBNSY-ED	General Building 130 operations information.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
MISC = Miscellaneous
NEESA = Naval Energy and Environmental Support Activity
RCRA = Resource Conservation and Recovery Act

4.55.4 PA Recommendations

No further action is recommended for AOC MISC 3 because the floor in Building 130 is composed of sealed concrete blocks. Spills likely occurred in association with Building 130 operations, but were likely cleaned up quickly. As agreed with regulatory agencies during a 15 April 1998 site walk, if the concrete floor was found to be more than 6 inches thick, the likelihood of any spilled liquids to have migrated through the concrete would be considered low, so the regulatory agencies did not require soil and groundwater sampling beneath Building 130 concrete floors. Because six holes were cored through the concrete in June 1998 and all showed a thickness of 8 to 12 inches for the concrete blocks and concrete floor beneath the blocks, no further action is recommended.

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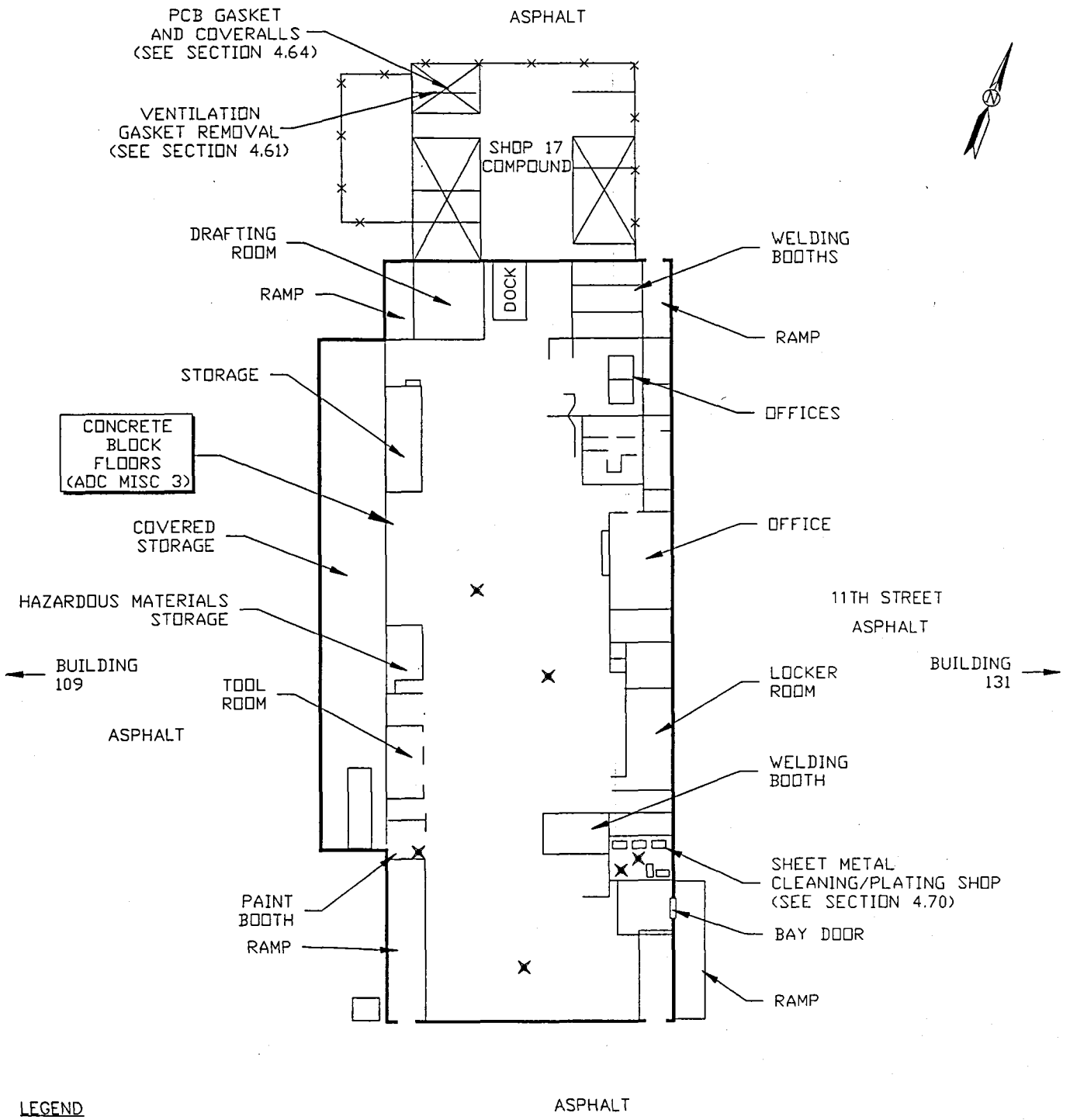

LEGEND

PCB = POLYCHLORINATED BIPHENYL
AOC = AREA OF CONCERN
MISC = MISCELLANEOUS
X = CONCRETE CORED 3 JUNE 1998 ALL 8" TO 12" THICK

NOTE: CONCRETE FLOOR IS LOCATED THROUGHOUT BUILDING 130.

0 50 100

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 3 CONCRETE BLOCK FLOORS BUILDING 130 GROUP B AREAS OF CONCERN	FIGURE 4.55-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.55-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.55-2 Concrete Block Floors, Building 130 (AOC MISC 3) Facing Southwest 1/14/98

Figure 4.55-3 Building 130 Concrete Floor Cored, (AOC MISC 3) Facing Down 6/11/98

4.56 WOOD BLOCK FLOORS, BUILDING 132 (AOC MISC 4)

This section presents a description of the Building 132 and its wood block floors (AOC MISC 4), associated operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.56.1 Site Description

Table 4.56-1 summarizes the location and characteristics of AOC MISC 4. A site map is provided as Figure 4.56-1. Site photographs are shown in Figures 4.56-2 and 4.56-3.

Table 4.56-1
AOC MISC 4 Site Descriptions

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 4	Throughout the central and western portion of Building 132 (Machine Shop).	G to J-31, -32	Wood blocks (approximately 8 inches long by 4 inches wide by 4 inches thick) composing the floor surface of work areas.	Wood block floors underlain by concrete.	Approximately 50,000 square feet of wood block flooring.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Building 132 was built in the early 1940s after the onset of World War II and housed the largest machine shop at LBNSY (DTSC 1989). In the 1970s, an eastern wing was constructed and used as the Pipe and Copper Shop. Subsequently, the Propeller and Shaft Shop was built on the western side of Building 132. The main activities in Building 132 included large and small machining services, propulsion component overhaul, and the testing of components such as pumps, valves, turbines, and propellers. Additional activities conducted included welding and flame cutting services for ships and throughout the shipyard as well as fabricating and repairing ferrous, nonferrous, and nonmetallic pipe for combatant and auxiliary service ships. Building 132 housed machinery including milling machines, drilling machines, lathes, grinders, planers, and saws (NEESA 1990).

As part of the January and March 1998 site reconnaissances, Building 132 wood block floors were observed to be located throughout the central and western portions of the building in work areas where activities required workers to stand. Dark stains on the wood blocks were observed at most locations throughout the building. It should be noted that the wood blocks generally appeared to have been treated with a creosote-type material.

Wood blocks were lifted at 32 various locations in April 1998 to observe the surface beneath; in each case, concrete was observed beneath the blocks. Figure 4.56-1 shows the locations

where wood blocks were lifted. Concrete and metal grating covered the floor in areas where wood blocks were not present.

4.56.2 Operational History and Waste Characteristics

Table 4.56-2 summarizes the location and characteristics of AOC MISC 4.

Table 4.56-2
AOC MISC 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 4	1940s to 1996	The use and temporary storage of hazardous materials, oils, and hydraulic fluids.	Potential for spills onto the wood block floors from grease, oily rags and absorbent, waste oil, sand blast grit, glass bead dust, aluminum oxide dust, hydrochloric acid, caustic soda, chromic acid, rust preventative, brazing flux, trichloroethylene, and asbestos construction material.	Unknown.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Operations in Building 132 involved the use and temporary storage of hazardous materials throughout the building. Some of the wastes generated at Building 132 were grease, oily rags and absorbent material, waste oil, sand blast grit, glass bead dust, aluminum oxide dust, hydrochloric acid, caustic soda, chromic acid, rust prevention fluids, brazing flux, trichloroethylene, and asbestos construction material. Building 132 machinery also utilized oils and hydraulic fluids that were stored in bulk in ASTs outside Building 132. One fuel AST that stored diesel fuel was located outside the eastern side of Building 132.

The machine shop housed various milling machines, drill presses, lathes, and cutting saws located above the wood block floors that used water-soluble cutting fluids (NEESA 1990). The cutting fluid was reused in the machines and disposed of when contaminants interfered with the function of the oil. Spills and leaks likely occurred during general operations. According to a 1990 hazardous waste minimization survey, the following hazardous wastes were generated at the Building 132 Machine Shop at that time (NEESA 1990):

- 148,000 gallons per year of oily waste and water mixture;
- 1,100 gallons per year of PD-680 solvent;
- 200 gallons per year of waste hydraulic oil;
- 30 gallons per year of isopropyl alcohol;
- 1,500 pounds per year of grinding swarf (i.e., particles);
- 50 gallons per year of acetone; and
- 500 gallons per year of Freon

From 1986 to 1993, LBNSY-ED inventoried all electrical equipment that may have contained PCBs. PCB oils were removed as necessary; disposal records indicate this work was performed from 1990 to 1993.

4.56.3 Preliminary Assessment Resources

Resources used for the PA for this AOC are listed in Table 4.56-3.

Table 4.56-3
AOC MISC 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Survey	1969	Brown and Caldwell	Building 132 hazardous waste generating activities.
Toxic and Hazardous Waste Procedures Survey	1980	Brown and Caldwell	Building 132 Machine Shop activities and wastes.
Initial Assessment Study	1983	NEESA	Building 132 plating operations and wastes generated.
RCRA Facility Assessment	1989	DTSC	Wastes generated during Building 132 operations.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Hazardous materials used and managed in the machine shop of Building 132.
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	General Building 132 operations information.
Final Environmental Baseline Survey	1996	LBNSY-ED	General Building 132 operations information.

AOC = Area of Concern
DTSC = Department of Toxic Substances
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
MISC = Miscellaneous
NEESA = Naval Energy and Environmental Support Activity
RCRA = Resource Conservation and Recovery Act

4.56.4 PA Recommendations

Based upon the PA information described above, investigational sampling was recommended for AOC MISC 4 because of the potential for contamination of the wood block floors caused by Building 132 machinery and its associated oils and hydraulic fluids. The regulatory agencies agreed during a 15 April 1998 site walk that soil and groundwater sampling would not be required beneath the wood block floors if concrete existed beneath the floors. On 28 April 1998, CDM Federal verified that concrete existed beneath the wood block floors, as described in Section 4.56.1. Therefore, only two wood block floor samples were recommended in the Work Plan (CDM Federal 1998a), one in a stained area and the other in an unstained area, to assess whether the wood would be considered a hazardous waste if it were to be removed. In addition, one liquid sample (from a socket in the floor containing an oil-like liquid) was recommended for collection and analysis (CDM Federal 1998a). A socket is a small hole in the floor used to hold a stanchion (i.e., a post that holds a sign or barrier) to prevent workers from getting too close to machinery.

4.56.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), two wood block samples and one liquid sample were collected. Samples were collected at AOC MISC 4 locations on 17 June and 18 June 1998. Samples were analyzed for the analytical categories indicated in Table 4.56-4. Both wood block samples were collected at ground surface. The northern sample (M4Wb) was collected behind stairs in an area of wood block flooring that was not stained, while the southern sample (M4Wa) was collected adjacent to machinery and was heavily stained with oil. The liquid sample (M4Fa) was collected at 0.5 feet below ground surface. The entire volume of liquid was removed from the 1-inch diameter, 0.5 foot deep socket and submitted to the laboratory for analysis. Sampling locations are shown in Figure 4.56-6.

Table 4.56-4
AOC MISC 4 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	PCBs	CN	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	Dioxins
Wood Block	2	2	2	2	2	2	2	2	1[a]
Liquid	0[b]	1	1	1	1	1	1	1	0[a]

Notes:

(a) One wood block sample was recommended for dioxins analysis by the regulatory agencies and agreed upon in the Work Plan (CDM Federal 1998a).

(b) Not enough sample volume was present for these analyses to be performed. The entire volume of oil in the socket was collected and submitted to the laboratory for analysis.

AOC = Area of Concern
CN = Cyanide
MISC = Miscellaneous
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.56.6 Analytical Results

Analytical results are discussed below for the wood block floor samples and the liquid sample. Analytical results for organic compounds are summarized in Tables 4.56-5 and 4.56-6 for the wood block and liquid samples, respectively. Toxicity equivalency factors and the TCDD equivalent for one wood block sample are presented in Table 4.56-7. Analytical results for metals and cyanide are shown in Tables 4.56-8 and 4.56-9. A summary of sample results is shown in Figure 4.56-7.

4.56.6.1 Wood Blocks

Two VOCs, 25 SVOCs, TPH-gasoline, TPH-diesel, TPH-motor oil, and 15 of the 17 metals were detected in at least one sample. PCBs, cyanide, and 2 of the 17 metals were not detected (although PCB Aroclor 1260 was detected at a concentration of 6.56 mg/kg in a field QC duplicate wood block sample). Several dioxins and furans isomers were detected in the stained wood block sample (98SY-MW4a-B-0), as shown in Tables 4.56-5 and 4.56-7.

4.56.6.2 Liquid

TPH-motor oil and 5 of the 17 metals were detected in the liquid sample. The TPH concentration indicates that the sample was virtually 100% oil with metals in solution. PCBs, TPH-gasoline, and TPH-diesel were not detected. VOCs were not analyzed because not enough sample volume could be collected; the entire volume of liquid in the socket was submitted for laboratory analysis.

4.56.7 Data Comparison to Screening Criteria

The stained wood block sample had three metals concentrations that exceeded screening criteria. The chromium concentration of 269J mg/kg exceeded the Federal screening criteria (20 times U.S. EPA RCRA TCLP) of 100 mg/kg; the lead concentration of 668J mg/kg exceeded the Federal screening criteria (20 times U.S. EPA RCRA TCLP) of 100 mg/kg; and the copper concentration of 2,240J mg/kg exceeded the State of California screening criteria of 2,500 mg/kg. The total toxicity equivalency factor (TEF) for dioxins and furans also exceeded screening criteria.

There are no State of California or Federal hazardous waste classification criteria for TPH-motor oil; however, the TPH-motor oil detection of 1,000,000 mg/kg indicates that the liquid sample was virtually 100% oil.

4.56.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample results were rejected, and data qualifiers were applied to samples as described in Appendix O.

The entire volume of liquid in the socket was collected and submitted to the laboratory for analysis. Because the volume was so small, VOCs analysis could not be performed. In addition, it was necessary for the laboratory to perform a large dilution for the SVOCs test, resulting in detection limits 12,000 times higher than normally could be achieved. This may have resulted in some analytes that were present in the sample being reported as nondetected. But because the entire volume of liquid was removed during sampling, this consequence is not critical.

The liquid sample results were reported in mg/kg, rather than mg/L, because the sample contained more oil than water.

4.56.9 Recommendations

No further action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall.

Based on sampling results, the wood block floors could be considered a hazardous waste (for disposal purposes) if removed from their current location.

At the time of conveyance, the Department of the Navy (DoN) will provide the transferee with all information gathered on the AOCs. It is the responsibility of the transferee to determine the appropriate handling and disposal of soil or other media removed from any AOC at the former Long Beach Naval Complex. The DoN is not in a position to provide assurances that the new owner will comply with all applicable state and federal regulations at all Areas of Concern. The enforcement of state or federal laws and regulations dealing with hazardous wastes is the responsibility of those state and federal agencies given such authority.

Table 4.56-5
AOC MISC 4 Sampling Results Summary for Organics (Wood Blocks)
June 1998

WOOD BLOCK							
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**		**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
			M4Wa (stained)	**M4Wb (not stained)**			
VOCs (60 analytes)[b]							
Naphthalene	2	2	1,400J	5,500J	NA	NA	0
p-Isopropyltoluene	2	1	ND	54J	NA	NA	0
SVOCs (64 analytes)[b]							
Acenaphthene	2	2	642J	640	NA	NA	0
Acenaphthylene	2	2	83.7	67J	NA	NA	0
Anthracene	2	2	1,060	817	NA	NA	0
Benz(a)anthracene	2	2	1,310J	660	NA	NA	0
Benzo(a)pyrene	2	2	220J	380J	NA	NA	0
Benzo(b)fluoranthene	2	1	ND	410J	NA	NA	0
Benzo(g,h,i)perylene	2	2	81.2J	150J	NA	NA	0
Benzo(k)fluoranthene	2	2	280J	240J	NA	NA	0
Bis(2-chloroisopropyl)ether	2	1	31J	ND	NA	NA	0
2-Chloronapthalene	2	1	5J	ND	NA	NA	0
Chrysene	2	2	577J	560J	NA	NA	0
Dibenz(a,h)anthracene	2	2	30J	160J	NA	NA	0
Dibenzofuran	2	1	ND	923	NA	NA	0
2,4-Dimethylphenol	2	1	87.2	ND	NA	NA	0
Fluoranthene	2	2	2,200	1,900	NA	NA	0
Fluorene	2	2	510	597	NA	NA	0
Ideno(1,2,3-cd)pyrene	2	1	ND	160J	NA	NA	0
2-Methylnaphthalene	2	2	480J	722	NA	NA	0
3/4-Methylphenol(m/p-Cresol)	2	2	280	71J	NA	4,000	0
2-Methylphenol(o-Cresol)	2	1	140	ND	NA	4,000	0
Naphthalene	2	2	715J	1,400	NA	NA	0
Phenanthrene	2	2	3,900	3,200	NA	NA	0
Phenol	2	1	15J	ND	NA	NA	0
2-Picoline	2	1	6.8J	ND	NA	NA	0
Pyrene	2	2	1,700	1,300	NA	NA	0
PCBs	2	0	ND	ND	NA	NA	0
Dioxins-TCDD							
1,2,3,6,7,8-HexaCDD	1	1	4.6×10^{-5}	N/A	NA	NA	0
1,2,3,4,6,7,8-HeptaCDD	1	1	9.9×10^{-5}	N/A	NA	NA	0
1,2,3,4,6,7,8,9-OctaCDD	1	1	11.1×10^{-5}	N/A	NA	NA	0
1,2,3,4,7,8-HexaCDF	1	1	0.7×10^{-5}	N/A	NA	NA	0
1,2,3,4,6,7,8-HeptaCDF	1	1	1.6×10^{-5}	N/A	NA	NA	0
1,2,3,4,6,7,8,9-OctaCDF	1	1	0.63×10^{-5}	N/A	NA	NA	0
TCDD equivalents			**2.85×10^{-4}**	N/A	0.01	NA	1
TPH-Gasoline	2	2	35J[c]	1,900J[c]	NA	NA	0
TPH-Diesel	2	2	99,000J[d]	650,000J[d]	NA	NA	0
TPH-Motor Oil	2	2	190,000J	320,000J	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leachate procedure (TCLP) criteria used.
(b) If not listed in this table, the remaining analytes were not detected.
(c) Not a typical gasoline pattern, sample contained high concentration of VOC analytes.
(d) Mixture of compound in diesel/motor oil range.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.56-6
AOC MISC 4 Sampling Results Summary for Organics (Liquid)
June 1998

LIQUID						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]	0	N/A	N/A	N/A	N/A	N/A
SVOCs (64 analytes)	1	0[c]	ND	N/A	N/A	0
PCBs	1	0	ND	N/A	N/A	0
TPH-Gasoline	1	0	ND	N/A	N/A	0
TPH-Diesel	1	0	ND	N/A	N/A	0
TPH-Motor Oil	1	1	1,000,000[d]	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leachate procedure (TCLP) criteria used.
(b) Not enough sample volume for analysis.
(c) Dilution factor of 12,000 due to small volume of sample available for analysis.
(d) 100 percent oil.

AOC = Area of Concern
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.56-7
AOC MISC 4 Toxicity Equivalency Factors and TCDD Equivalent for Dioxins and Furans (Wood Blocks)
June 1998

WOOD BLOCK			
Analytical Parameter	**Concentration (mg/kg)**	**Toxicity Equivalency Factor**	**TCDD Equivalent**
Dioxins			
2,3,7,8-TCDD	ND	1	N/A
1,2,3,7,8-penta CDD	ND	0.5	N/A
1,2,3,4,7,8-hexa CDD	ND	0.1	N/A
1,2,3,6,7,8-hexa CDD	$4.6x10^{-4}$	0.1	$4.6x10^{-5}$
1,2,3,7,8,9-hexa CDD	ND	0.1	N/A
1,2,3,4,6,7,8-hepta CDD	$9.9x10^{-3}$	0.01	$9.9x10^{-5}$
1,2,3,4,6,7,8,9-octa CDD	0.111	0.001	$1.11x10^{-4}$
2,3,7,8-TCDF	ND	0.1	N/A
1,2,3,7,8-penta CDF	ND	0.05	N/A
2,3,4,7,8-penta CDF	ND	0.5	N/A
1,2,3,4,7,8-hexa CDF	$0.7x10^{-4}$	0.1	$0.7x10^{-5}$
1,2,3,6,7,8-hexa CDF	ND	0.1	N/A
2,3,4,6,7,8-hexa CDF	ND	0.1	N/A
1,2,3,7,8,9-hexa CDF	ND	0.1	N/A
1,2,3,4,6,7,8-hepta CDF	$1.6x10^{-3}$	0.01	$1.6x10^{-5}$
1,2,3,4,7,8,9-hepta CDF	ND	0.01	N/A
1,2,3,4,6,7,8,9-octa CDF	$6.3x10^{-3}$	0.001	$6.3x10^{-6}$
		TCDD Equivalents	**$2.85x10^{-4}$**

Notes:

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
TCDD = Tetra Chlorinated Dibenzo Dioxins
CDD = Chlorinated Dibenzo Dioxins
TCDF = Tetra Chlorinated Dibenzo Dioxins
CDF = Chlorinated Dibenzo Dioxins
N/A = Not Applicable
ND = Not detected

Table 4.56-8
AOC MISC 4 Sampling Results Summary for Inorganic Compounds (Wood Block)
June 1998

WOOD BLOCK							
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)		State of California Regulatory Levels[a] (mg/kg)	U.S. EPA RCRA Criteria[a] (mg/kg)	No. of Detections above Criteria
			M4Wa (stained)	M4Wb (not stained)			
Antimony	2	2	18.8J	0.82J	500	NA	0
Arsenic	2	2	3.0J	0.64	500	100	0
Barium	2	2	58.4J	11.5	10,000	2,000	0
Beryllium	2	0	ND	ND	NA	NA	0
Cadmium	2	2	6.2J	2.1	100	20	0
Chromium	2	2	**269J**	13.8J	2,500	100	1
Cobalt	2	2	79.0J	14.4J	8,000	NA	0
Copper	2	2	**3,340J**	170	2,500	NA	1
Lead	2	2	**668J**	91.6J	1,000	100	1
Mercury	2	2	0.24	0.30	20	4	0
Molybdenum	2	2	33.2J	4.6	3,500	NA	0
Nickel	2	2	236J	23.8	2,000	NA	0
Selenium	2	1	1.9J	ND	100	20	0
Silver	2	2	3.8J	0.40J	500	100	0
Thallium	2	0	ND	ND	NA	NA	0
Vanadium	2	2	8.9J	1.1	2,400	NA	0
Zinc	2	2	1,820J	471J	5,000	NA	0
Cyanide	2	0	ND	ND	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leachate procedure (TCLP) criteria used.

Bold indicates that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency

Table 4.56-9
AOC MISC 4 Sampling Results Summary for Inorganic Compounds (Liquid)
June 1998

LIQUID						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**U.S. EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
Antimony	1	0	ND	500	NA	0
Arsenic	1	0	ND	500	100	0
Barium	1	0	ND	10,000	2,000	0
Beryllium	1	0	ND	75	NA	0
Cadmium	1	0	ND	100	20	0
Chromium	1	1	1.1	2,500	100	0
Cobalt	1	0	ND	8,000	NA	0
Copper	1	1	143	2,500	NA	0
Lead	1	1	13.1	1,000	100	0
Mercury	1	0	ND	20	4	0
Molybdenum	1	0	ND	3,500	NA	0
Nickel	1	1	0.81J	2,000	NA	0
Selenium	1	0	ND	100	20	0
Silver	1	0	ND	500	100	0
Thallium	1	0	ND	700	NA	0
Vanadium	1	0	ND	2,400	NA	0
Zinc	1	1	48.5	5,000	NA	0
Cyanide	1	0	ND	NA	NA	0

Notes:

(a) See Section 3.7 for screening criteria.

Bold indicates the metal exceeds the screening criteria.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency

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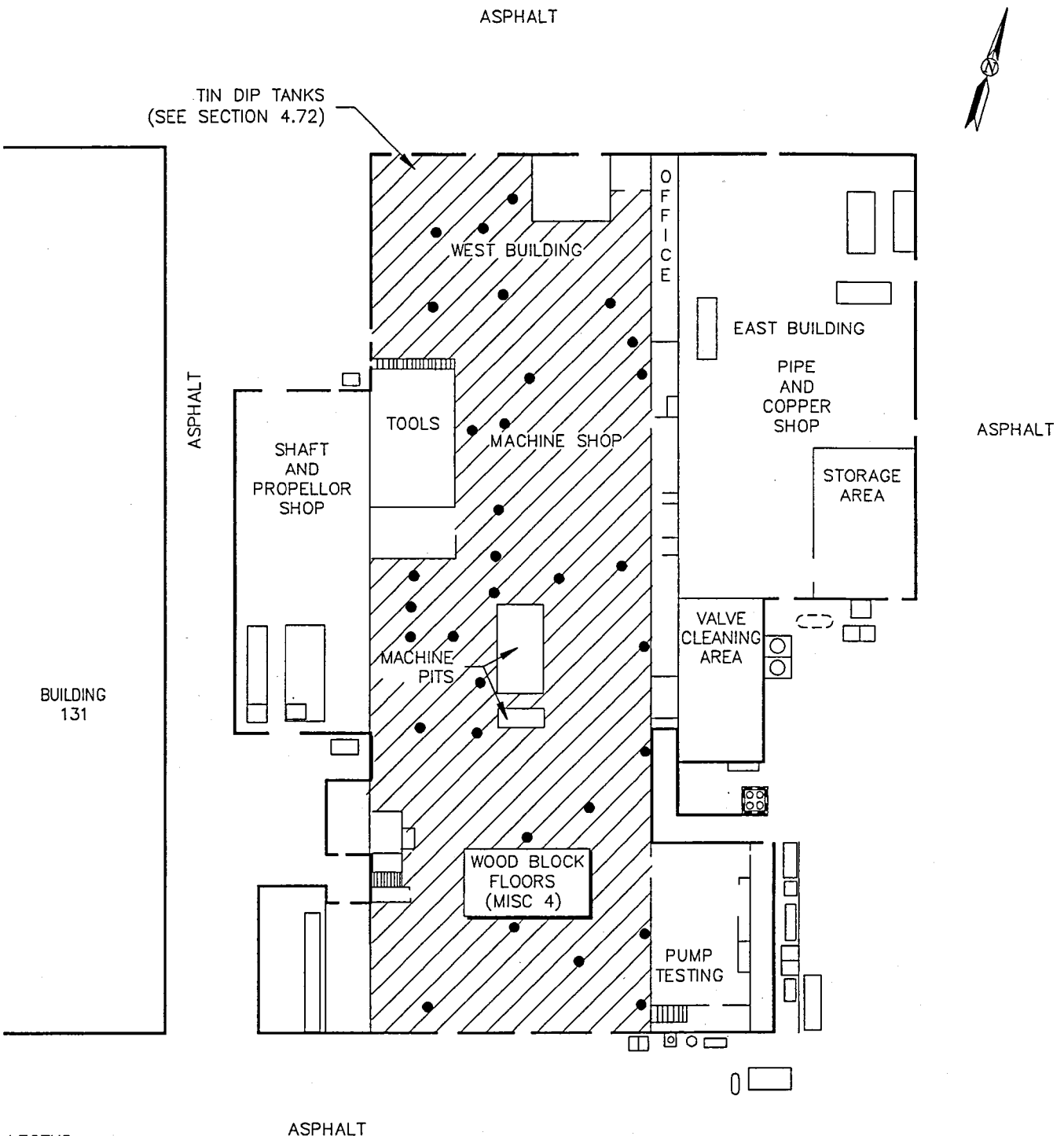

LEGEND

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS

= WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)

● CONCRETE OBSERVED BELOW WOOD FLOOR 28 APRIL 1998 (32 LOCATIONS)

0 50 100 150

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 4 WOOD BLOCK FLOORS BUILDING 132	FIGURE 4.56-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.56-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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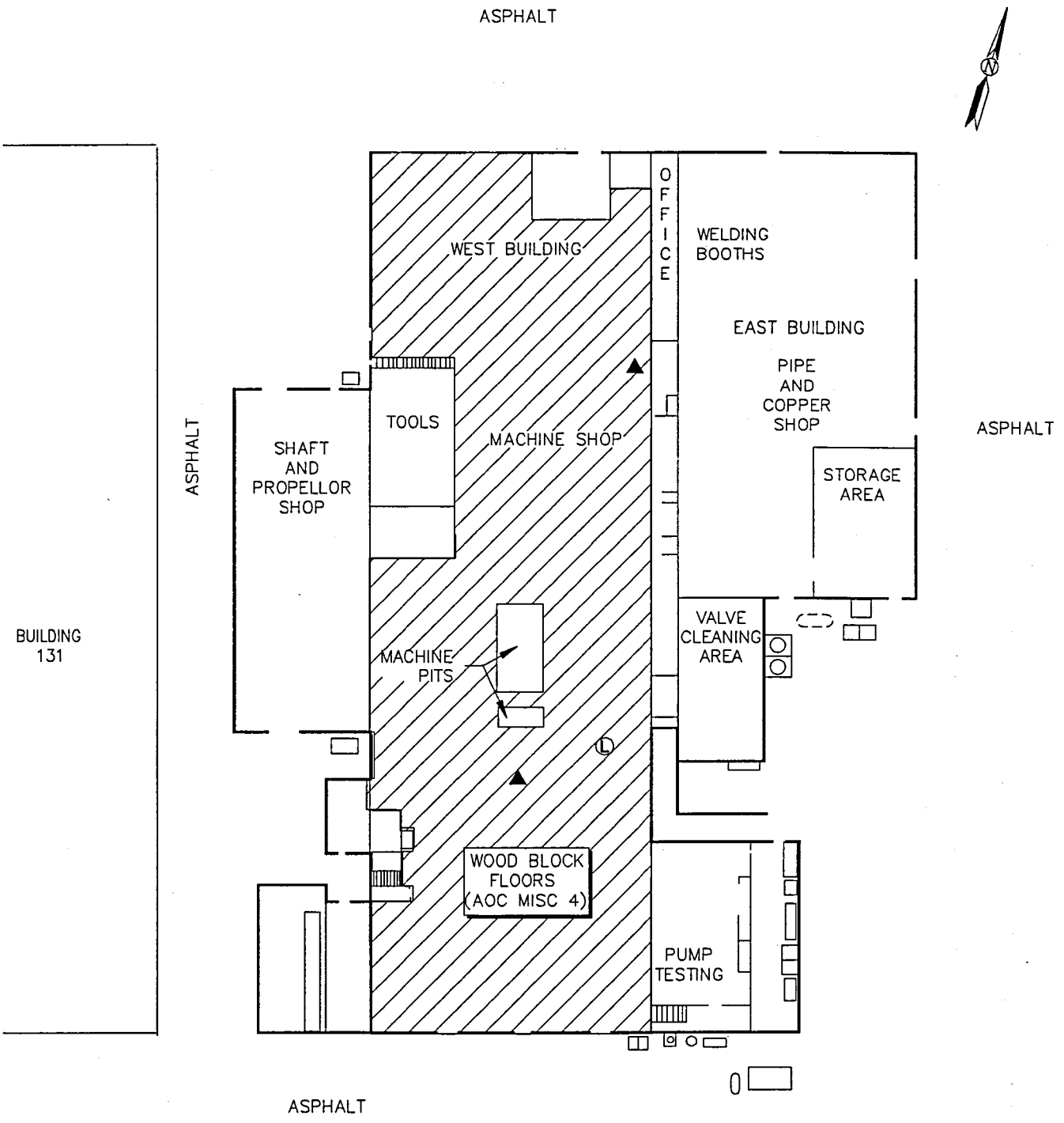
Figure 4.56-2 Wood Block Floors (AOC MISC 4), Building 132 Facing North 1/14/98

Figure 4.56-3 Wood Block Floors (AOC MISC 4), Building 132 Facing Down 1/14/98

Figure 4.56-4 Wood Block Floors (AOC MISC 4), Unstained But Containing Creosote-type Preservative, Building 132, Facing Down 1/14/98

Figure 4.56-5 Socket in Floor Where Liquid Sample was Collected, Building 132 (AOC MISC 4) 6/17/98



Ⓛ = LIQUID SAMPLE LOCATION

▲ = WOOD BLOCK FLOOR SAMPLE LOCATION

AOC = AREA OF CONCERN
MISC = MISCELLANEOUS

= WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)

0 50 100 150
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AOC MISC 4 BUILDING 132	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.56-6		4.56-6
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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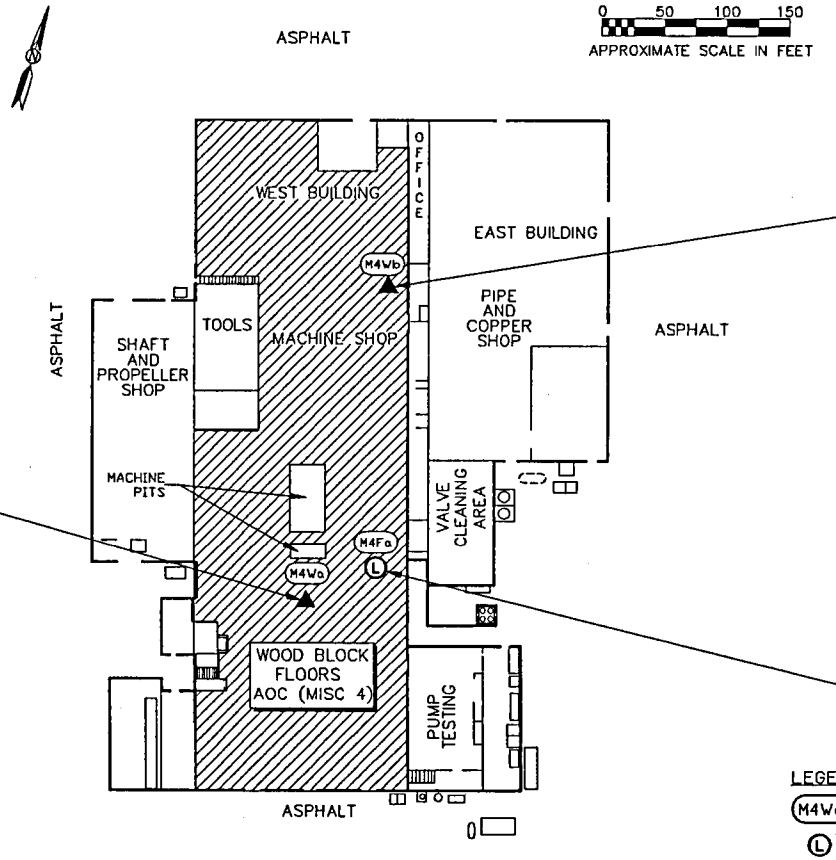
98SY-M4Wa-B-0 (STAINED BLOCK)	
ANALYTE	CONC. (mg/kg)
COPPER	3340J
CHROMIUM	269J
LEAD	668J
ACENAPHTHENE	642J
ACENAPHTHYLENE	83.7
ANTHRACENE	1,060
BENZ(A)ANTHRACENE	1,310J
BENZO(A)PYRENE	220J
BENZO(G,H,I)PERYLENE	81.2J
BENZO(K)FLUORANTHENE	280J
BIS(2-CHLOROISOPROPYL)ETHER	31J
2-CHLORONAPHTHALENE	5J
CHRYSENE	577J
DIBENZ(A,H)ANTHRACENE	30J
2,4-DIMETHYLPHENOL	87.2J
FLUORANTHENE	2,200
FLUORENE	510
2-METHYLNAPHTHALENE	480 J
3/4-METHYLPHENOL	280
2-METHYLPHENOL	140
NAPHTHALENE	1,400J/715J(b)
PHENANTHRENE	3,900
PHENOL	15J
2-PICOLINE	6.8J
PYRENE	1,700
TPH-GASOLINE	35J
TPH-DIESEL	99,000J
TPH-MOTOR OIL	190,000J
DIOXINS AND FURANS:	
1,2,3,6,7,8-HexaCDD	4.6×10^{-6}
1,2,3,4,6,7,8-HeptaCDD	9.9×10^{-6}
1,2,3,4,6,7,8,9-OctaCDD	11.1×10^{-6}
1,2,3,4,7,8-HexaCDF	0.7×10^{-6}
1,2,3,4,6,7,8-HeptaCDF	1.6×10^{-6}
1,2,3,4,6,7,8,9-OctaCDF	0.63×10^{-6}
TCDD EQUIVALENCY	2.85×10^{-6}



98SY-M4Wb-B-0 (UNSTAINED BLOCK)	
ANALYTE	CONC. (mg/kg)
P-ISOPROPYLTOLUENE	54 J
NAPHTHALENE	5,500J/1,400(b)
ACENAPHTHENE	640
ACENAPHTHYLENE	67 J
ANTHRACENE	817
BENZ(A)ANTHRACENE	660
BENZO(A)PYRENE	380 J
BENO(B)FLUORANTHENE	410 J
BENZO(G,H,I)PERYLENE	150 J
BENZO(K)FLUORANTHENE	240 J
CHRYSENE	560 J
DIBENZ(A,H)ANTHRACENE	160 J
DIBENZOFURAN	923
FLUORANTHENE	1,900
FLUORENE	597
IDENO(1,2,3-CD)PYRENE	160 J
2-METHYLNAPHTHALENE	722
3/4-METHYLPHENOL	71 J
PHENANTHRENE	3,200
PYRENE	1,300
TPH-GASOLINE	1,900 J
TPH-DIESEL	650,000J
TPH-MOTOR OIL	320,000J

98SY-M4Fa-L-0.5 (a) (LIQUID IN SOCKET)	
ANALYTE	CONC. (mg/kg)
TPH-Motor Oil	1,000,000

98SY-M4Wa-B-0=SAMPLE NAME (TYPICAL)
WHERE B = WOOD BLOCK SAMPLE
WHERE L = LIQUID SAMPLE
WHERE 0 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION
MISC. = MISCELLANEOUS
TCDD = TETRACHLORODIBENZODIOXIN
CDD = CHLORINATED DIBENZODIOXIN
CDF = CHLORINATED DIBENZOFURAN

LEGEND
M4Wa = SAMPLE IDENTIFIER
L = LIQUID SAMPLING LOCATION
▲ = WOOD BLOCK SAMPLING LOCATION
= WOOD BLOCK FLOORS (UNDERLAIN BY CONCRETE)
(a) = LIMITED ANALYSES PERFORMED DUE TO LACK OF SAMPLE VOLUME. LIQUID ANALYZED IN UNITS OF MG/KG BECAUSE SAMPLE WAS MOSTLY OIL.
(b) = RESULTS BY U.S. EPA METHODS 8260B AND 8270C, RESPECTIVELY.
= STAINED BLOCK SAMPLE RESULTS EXCEEDS CRITERIA

NOTE: THIS FIGURE SHOWS ALL ORGANIC DETECTIONS AS WELL AS METALS THAT EXCEEDED HAZARDOUS WASTE SCREENING CRITERIA.

SCREENING CRITERIA:	
COPPER	2,500 mg/kg
CHROMIUM	100 mg/kg
LEAD	100 mg/kg
TCDD	0.01 mg/kg

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 6/99
FN: 4.56-7
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC MISC 4
BUILDING 132
GROUP B AREAS OF CONCERN

FIGURE
4.56-7

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

61-25.4

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4.57 DIRT FLOOR-FOUNDRY/HEAT TREATMENT, BUILDING 128 (AOC MISC 5)

This section presents a description of the Dirt Floor-Foundry/Heat Treatment area of Building 128 (AOC MISC 5), its operational history and waste characteristics, PA resources used, and recommendations. Based on PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.57.1 Site Description

Table 4.57-1 summarizes the location and characteristics of AOC MISC 5. A site map is provided as Figure 4.57-1. Site photographs are shown in Figures 4.57-2 to 4.57-3.

Table 4.57-1
AOC MISC 5 Site Descriptions

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 5	Inside northeastern corner of Building 128.	C-29, D-29, C-30, D-30	Dirt floor in the heat treatment/ forging area.	Forging tools, forge furnaces, saws, grinders, sandblasting booth, quench tanks, and general work areas situated on a dirt floor surrounded by concrete.	Dirt floor area: approximately 75 feet by 55 feet.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Building 128 was built in 1945 to increase work space for manufacturing activities at LBNSY. It housed the materials and machinery to fabricate, assemble, and install such parts as structural members of ships. Building 128 was used for heavy metal working operations that included welding, quenching, and forge and foundry work. This AOC focuses on the dirt floor in the northeastern portion of Building 128 that was associated with forging and heat treating activities.

The dirt floor in the heat treatment/forging area at Building 128 consists of forging work areas including forging furnaces, forging hand tools, saws, a grinder, a sandblasting booth, a quench tank, and general work areas situated on a dirt floor.

As part of the January 1998 site reconnaissance, the Building 128 dirt floor in the heat treatment/forging area was observed for evidence of potential contamination. The dirt floor appeared to be approximately 3 to 4 inches thick and consisted of a fine sand-like material on top of concrete. Machinery located in this area was situated on the dirt floor, but was structurally mounted in the concrete. Hand-tools were stored against a wall and rested directly on the dirt floor. An oil quench tank located on the east side of the dirt floor showed evidence of oil spilled on the side of the container and also slight oil stains on the dirt floor.

4.57.2 Operational History and Waste Characteristics

Table 4.57-2 summarizes the operational history and waste characteristics for AOC MISC 5.

Table 4.57-2
AOC MISC 5 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 5	Prior to 1955 to 1997	Forging, heat treating metal, and blasting.	Materials spilled on the dirt floor including: oil, metal slag, and used glass beads.	Unknown.

AOC = Area of Concern MISC = Miscellaneous No. = Number

According to the 1990 NEESA Comprehensive Hazardous Waste Minimization Survey, several processes in the heat treatment/forging area used hazardous materials that may have potentially impacted the dirt floor. The dirt floor was likely used to facilitate the removal of any molten metal slag (generated during forging activities) that was spilled on the floor. The forging process generated waste oil from heat treatment processes.

One oil quenching tank was located in the dirt floor heat treatment/forging area (see Section 4.73). The dirt floor may have been impacted during cleaning of this tank or from any spillage that may have occurred during its normal usage. The tank was emptied and cleaned every three years. Spilled oil was cleaned using "Safestep" absorbent (NEESA 1990).

The heat treatment/forging area generated the following hazardous wastes as of 1990 (NEESA 1990):

- 110 gallons per year of quenching oil (quench oils are addressed under AOC PT 10 – Quench Tanks in Section 4.73); and
- 500 pounds per year of "Safestep" spill absorbent.

4.57.3 Preliminary Assessment Resources

Resources used for the PA for this AOC are listed in Table 4.57-3.

Table 4.57-3
AOC MISC 5 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Public Works Sketch 6626	1955	LBNSY-PW	Shows equipment and dirt floor in the heat treatment/forging area.
Initial Assessment Study	1983	NEESA	Wastes generated at the Building 128 heat treatment, forging, and foundry areas.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 128 heat treatment/forging area operations including wastes generated.
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	General Building 128 operations information.
Final Environmental Baseline Survey	1996	LBNSY-ED	General Building 128 operations information.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
LBNSY-ED = Long Beach Naval Shipyard, Public Works
MISC = Miscellaneous
NEESA = Naval Energy and Environmental Support Activity
PA = Preliminary Assessment

4.57.4 PA Recommendations

Based on PA findings, investigational sampling was recommended for AOC MISC 5 because of potential impacts to the dirt floor from Building 128 heat treatment/forging area operations.

4.57.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), four soil samples were collected. Samples were collected for AOC MISC 5 on 17 June 1998 at locations indicated on Figure 4.57-4. The samples, collected at the ground surface, were analyzed for metals as indicated in Table 4.57-4. Possible spills of oil from the quench tank are addressed in Section 4.73 of this report.

Table 4.57-4
AOC MISC 5 Number of Samples and Analyses

Matrix	Metals
Soil	4

AOC = Area of Concern
MISC = Miscellaneous

4.57.6 Analytical Results

Analytical results for the AOC MISC 4 soil samples are presented in Table 4.57-5. Sixteen of the 17 metals analyzed were detected at this AOC.

An additional sample was collected in the dirt floor in the heat treatment/forging area as part of the quench tanks investigation (AOC PT 10; see Section 4.73). The metals results for that sample (98SY-T10d-S-0) were similar to the metals results for the other four dirt floor area surface soil samples, as indicated in Figure 4.57-5. Additional analyses for organic compounds that may have been present in quench oils are discussed in Section 4.73.

4.57.7 Data Comparison to Screening Criteria

Arsenic, chromium, and lead were detected at concentrations above both their respective industrial PRGs and background levels. Lead results exceeded criteria in three of four samples, while arsenic and chromium results exceeded the criteria for all four samples. In one or more samples, antimony, cadmium, copper, lead, molybdenum, and/or nickel exceeded their respective residential PRGs but not their industrial PRGs. For hazardous waste characterization purposes, the concentrations of chromium, copper, lead, and nickel exceeded either federal and/or state screening criteria.

4.57.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

As discussed in Section 4.57.6, metals results for sample 98SY-T10d-S-0 (collected for AOC PT 10) are most likely associated with the dirt floor heat treatment/forging activities rather than quench oil tank activities, so these metals results are shown in Figure 4.57-5 along with the four samples collected for AOC MISC 4.

4.57.9 Recommendations

Surface soil in the dirt floor heat treatment/forging area of Building 128 (AOC MISC 5) contained three metals (arsenic, chromium, and lead) above soil industrial PRGs and background levels, so the soil should be removed and disposed of as hazardous waste. As noted in Section 4.73, the concentrations of PCBs and dioxins and furans near the quench oil tank also exceed screening criteria. Approximately 40 cubic yards of surface soil exist in the heat treatment/forging area dirt floor.

Table 4.57-5
AOC MISC 5 Sampling Results Summary for Metals
June 1998

SOIL									
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Criteria	State of California Regulatory Levels[c] (mg/kg)	U.S. EPA RCRA Criteria[c] (mg/kg)	No. of Detections Exceeding State or Federal Criteria
Antimony	4	4	45.3, 30.1J, 23.9, 31.7	750	11.3	0	500	NA	0
Arsenic	4	4	**22.9, 27.7, 22.3, 30.4**	3.0	17.5	4	500	100	0
Barium	4	4	272, 108, 105, 166	10,000	275	0	10,000	2,000	0
Beryllium	4	0	ND	3,400	1.4	0	75	NA	0
Cadmium	4	4	9.7, 3.7J, 3.1, 5.4	930	1.7	0	100	20	0
Chromium	4	4	**3,130, 2,070, 1,710, 1,830**	450	60.9	4	2,500	100	4
Cobalt	4	4	62.6, 83.3, 71.7, 82.8	29,000	24.5	0	8,000	NA	0
Copper	4	4	4,450, 8,020, 5,000, 9,070	70,000	798.7	0	2,500	NA	4
Lead	4	4	**1,390, 774, 2,410, 1,320**	1,000	185.2	3	1,000	100	4
Mercury	4	4	0.35, 0.20, 0.50J, 0.83	560	2.5	0	20	4	0
Molybdenum	4	4	336, 404, 388, 395	9,400	NA	0	3,500	NA	0
Nickel	4	4	5,060J, 11,200J, 7,810J, 7,970J	37,000	32.6	0	2,000	NA	4
Selenium	4	3	2.5, 2.4J, 2.2	9,400	1.4	0	100	20	0
Silver	4	4	6.9J, 5.8, 4.8, 8.0	9,400	1.5	0	500	100	0
Thallium	4	3	1.9J, 3.4, 2.3	150	4.2	0	700	N/A	0
Vanadium	4	4	77.9, 43.2, 40.7, 57.0	13,000	84.9	0	2,400	NA	0
Zinc	4	4	1,770, 1,040, 785, 1,470	100,000	844.9	0	5,000	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.

Bold indicates that both the industrial PRG and background level were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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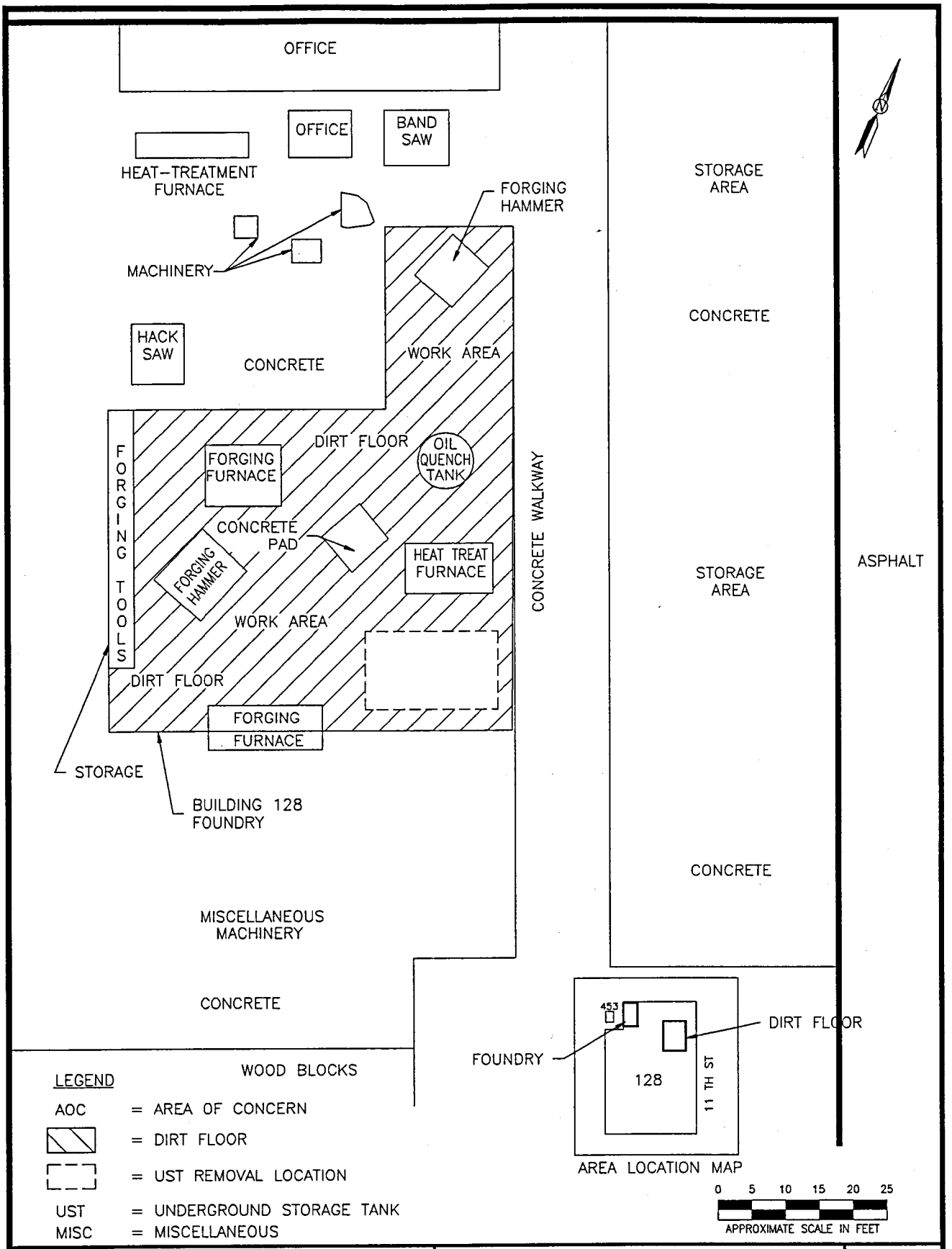

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 5 DIRT FLOOR/HEAT TREATMENT AREA BUILDING 128 GROUP B AREAS OF CONCERN	FIGURE 4.57-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.57-1	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157	

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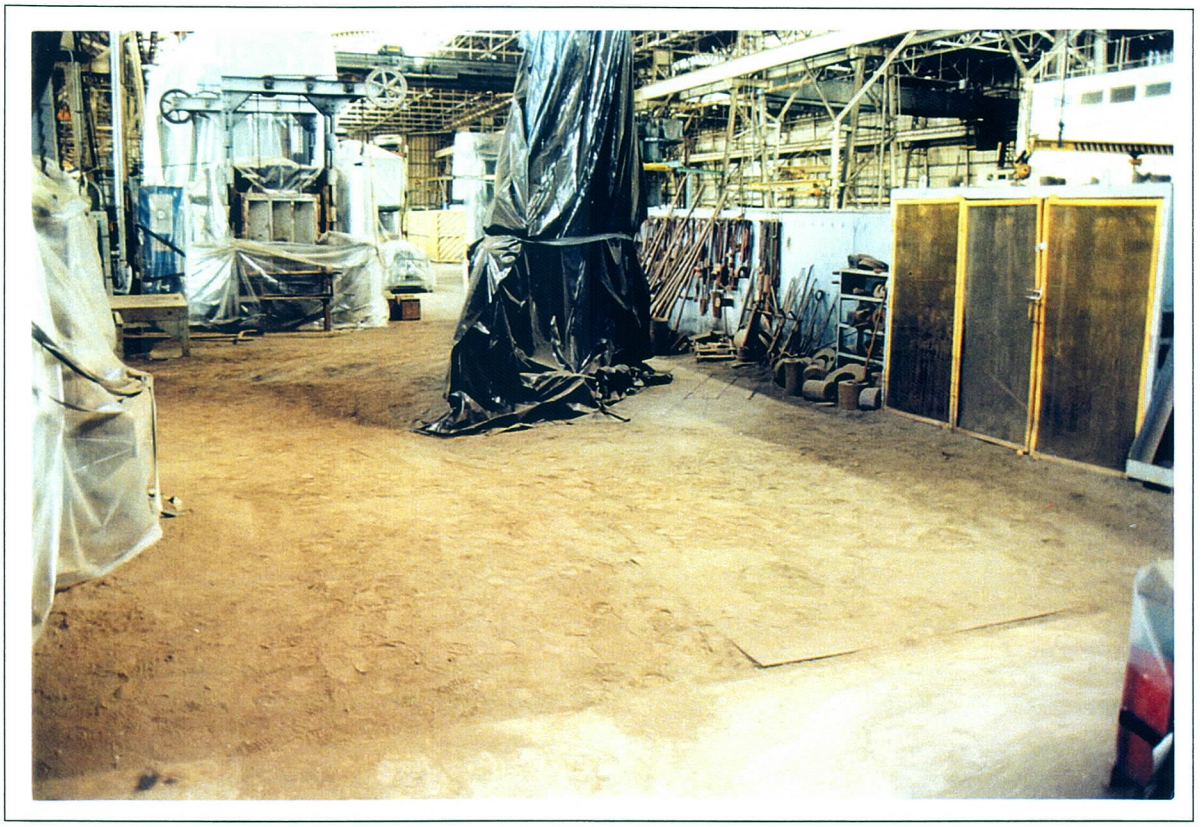
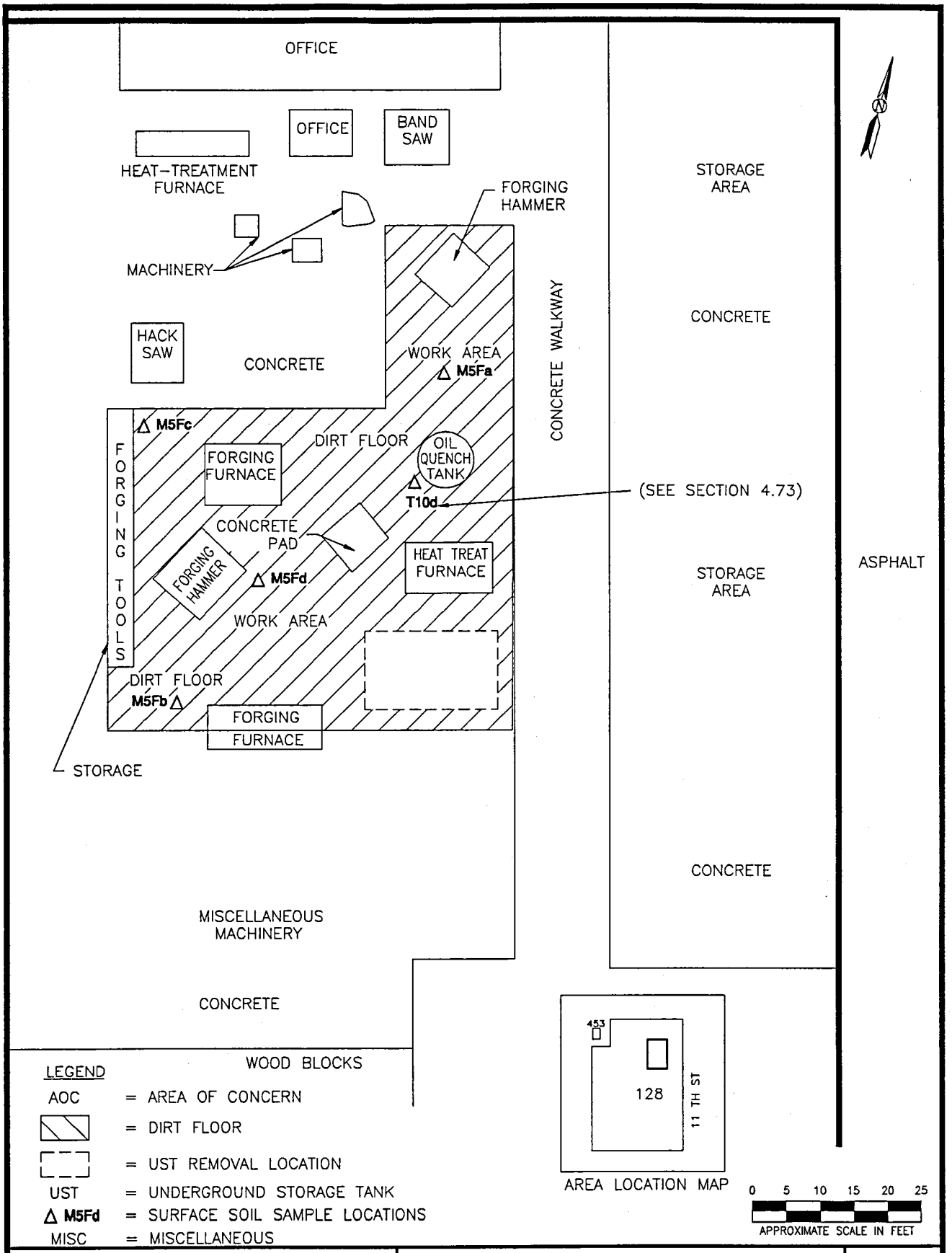


Figure 4.57-2 Dirt Floor in the Heat Treatment/Forging Area, Building 128 (AOC MISC 5), Facing South 6/17/98

Figure 4.57-3 Dirt Floor in the Heat Treatment/Forging Area, Building 128 (AOC MISC 5), Facing Northwest 6/17/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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FN: 4.57-4
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PROJECT NO. 6210-014-157

SAMPLING LOCATIONS
AOC MISC 5
DIRT FLOOR/ HEAT TREATMENT AREA
BUILDING 128
GROUP B AREAS OF CONCERN

FIGURE
4.57-4

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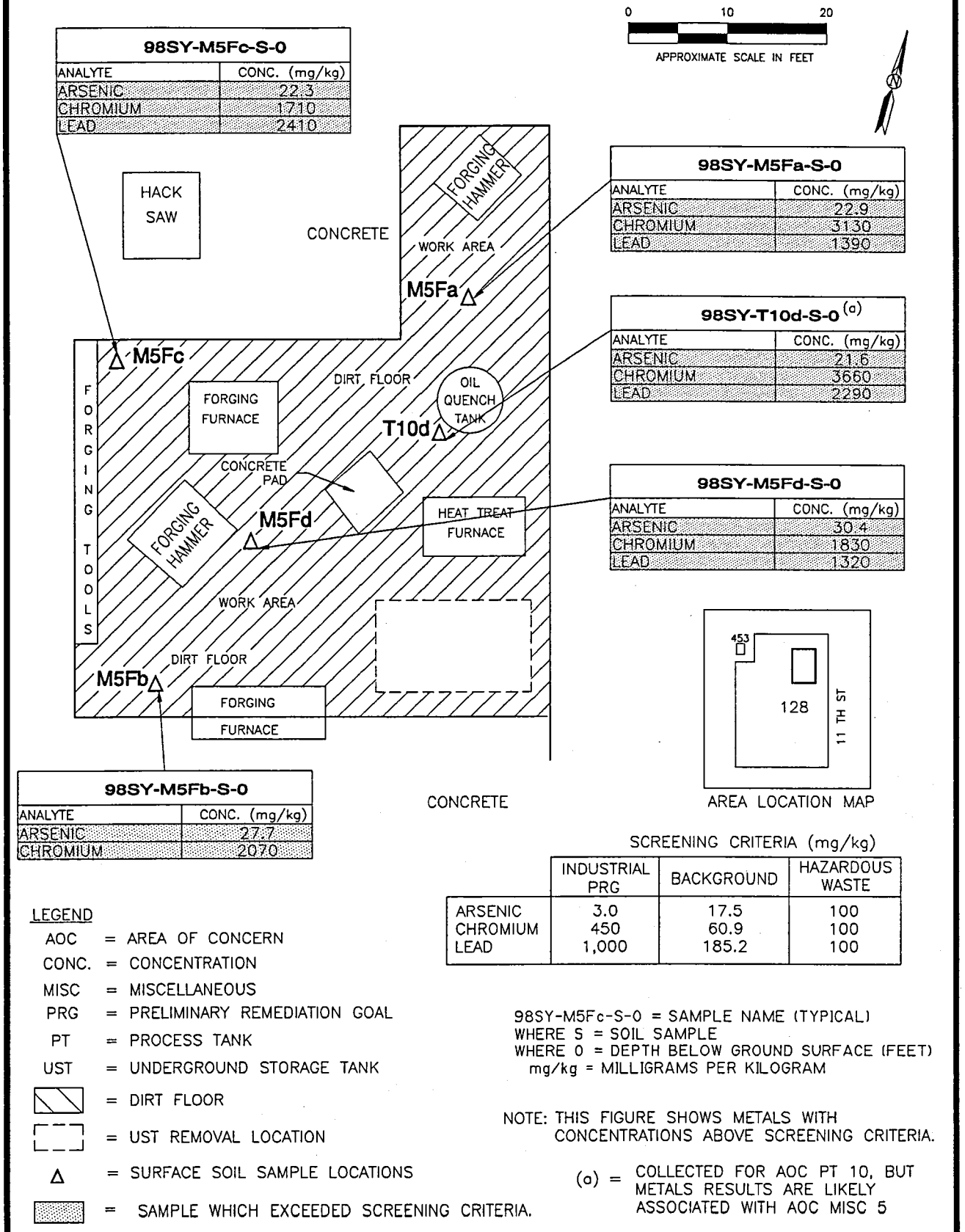

SCREENING CRITERIA (mg/kg)

	INDUSTRIAL PRG	BACKGROUND	HAZARDOUS WASTE
ARSENIC	3.0	17.5	100
CHROMIUM	450	60.9	100
LEAD	1,000	185.2	100

LEGEND

AOC = AREA OF CONCERN
CONC. = CONCENTRATION
MISC = MISCELLANEOUS
PRG = PRELIMINARY REMEDIATION GOAL
PT = PROCESS TANK
UST = UNDERGROUND STORAGE TANK
= DIRT FLOOR
= UST REMOVAL LOCATION
Δ = SURFACE SOIL SAMPLE LOCATIONS
= SAMPLE WHICH EXCEEDED SCREENING CRITERIA.

98SY-M5Fc-S-0 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE 0 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM

NOTE: THIS FIGURE SHOWS METALS WITH CONCENTRATIONS ABOVE SCREENING CRITERIA.

(a) = COLLECTED FOR AOC PT 10, BUT METALS RESULTS ARE LIKELY ASSOCIATED WITH AOC MISC 5

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.57-5
MODIFIED BY: J. Brown
PROJECT NO.6210-014-157

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC MISC 5
DIRT FLOOR/HEAT TREATMENT AREA
BUILDING 128
GROUP B AREAS OF CONCERN

FIGURE
4.57-5

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.58 DIESEL TEST CELLS, INCLUDING USTs 129.3-129.9, BUILDING 129 (AOC MISC 6)

A description of the Diesel Test Cells including USTs 129.3 through 129.9 (AOC MISC 6), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.58.1 to 4.58.4. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

USTs 129.1 and 129.2 are addressed separately as AOC UST 3 in Section 4.177.

4.58.1 Site Description

Table 4.58-1 summarizes the location and characteristics of AOC MISC 6. A site map is provided as Figure 4.58-1. Site photographs are shown in Figures 4.58-2 through 4.58-6.

Table 4.58-1
AOC MISC 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 6	Northeastern corner of Building 129.	D-31	Four cells (i.e., rooms) where diesel engines were tested.	Four test cells and one control room. Each test cell had a utility trench, an associated UST, and an engine mount.	Each test cell: approximately 20 feet wide by 40 feet long.

AOC = Area of Concern
MISC = Miscellaneous
No. = Number
UST = Underground Storage Tank

During a March 1998 site reconnaissance, four diesel test cells located in the northeastern corner of Building 129 were observed. The cells were in place but no longer used. Each cell consisted of a room approximately 20 feet wide by 40 feet long where diesel engines were tested under excessive load. Tracks existed within each cell to facilitate moving the engines in and out. A control room was located in the middle of the test cells. Little information is available on the testing operations (e.g., number of engines tested per month, volume of fuel used or spilled); however, a strong diesel odor was observed inside the building and the floors were heavily stained. Utility trenches in the floor did not have standing product during the March 1998 site visit, although stains on the trench walls indicated petroleum products had been in the trenches at some point in time.

Nine USTs were used in association with the diesel test cell operations; two of these, USTs 129.1 and 129.2, are addressed as AOC UST 3 in Section 4.177, leaving seven USTs addressed under AOC MISC 6. Five of these seven USTs were located in the rooms for the diesel test cells; four of these five USTs have been removed under the base-wide UST Compliance Program , while one was closed in place in 1997 (SWDIV 1998). The two

remaining diesel fuel USTs were located outside to the east of Building 129 and were also removed under the UST Compliance Program.

4.58.2 Operational History and Waste Characteristics

Table 4.58-2 summarizes the operational history and waste characteristics.

Table 4.58-2
AOC MISC 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 6	1973 to 1996	Testing of diesel engines under excessive load; used diesel fuel and engine oils.	Potential spills from general maintenance and leaks from engines, sumps, USTs, and associated pipelines.	Unknown.

AOC = Area of Concern
MISC = Miscellaneous
No. = Number
UST = Underground Storage Tank

The test cells operated from 1973 to 1996. Seven USTs were installed in 1986, while two USTs were installed at an unknown date. Table 4.58-3 lists information about the USTs associated with the diesel test cells.

USTs 129.3 and 129.4 were removed in 1992. Soil samples were collected at these USTs in February 1997 as part of the UST program at LBNSY. Soil beneath the two former USTs located outside of Building 129 (USTs 129.3 and 129.4) was sampled and recommended for no further action. The RWQCB approved closure of these USTs in 5 March and 22 May 1997 letters (Appendix F).

UST 129.5 Lube oil UST 129.5 was closed in place in 1997 and was removed in 1999. A closure report will be issued in 2000.

USTs 129.6 to 129.9 were removed in 1993. Soil near these four USTs in the four diesel test cell areas was sampled in 1993. TRPH results for soil samples near USTs 129.6 and 129.7 indicated non-detect and 32 mg/kg, respectively (Foster Wheeler 1993). Soil samples collected near tanks 129.8 and 129.9 indicated TRPH results of 47,400 and 32,000 mg/kg, respectively (Foster Wheeler 1993). In an 18 December 1997 letter, the RWQCB concurred with the Navy's proposal for no further action at USTs 129.6 and 129.7 (see Appendix F). RWQCB also agreed with proposed sampling hydraulically downgradient of USTs 129.8 and 129.9. In a 7 October 1999 letter, the RWQCB concurred with the Navy's proposal for no further action at USTs 129.8 and 129.9 (see Appendix F).

Table 4.58-3
AOC MISC 6 USTs Associated with the Diesel Test Cells at Building 129

Tank No.	Description	Dimensions	Location	Status	Previous Sampling	Proposed Sampling
129.3	Lube Oil UST	390 gallons	East of Bldg. 129	Removed 1992	Yes, NFA	None
129.4	Lube Oil UST	300 gallons	East of Bldg. 129	Removed 1992	Yes, NFA	None
129.5	Lube Oil UST	800 gallons	Diesel Test Cell No.1	Closed in place 1997, Removed 1999	None	None; removed under Compliance Program in 1999.
129.6	Lube Oil UST	60 gallons	Diesel Test Cell No.1	Removed 1993	Yes, NFA	None
129.7	Lube Oil UST	60 gallons	Diesel Test Cell No.2	Removed 1993	Yes, NFA	None
129.8	Lube Oil UST	60 gallons	Diesel Test Cell No.3	Removed 1993	Yes, 1993 Closure Report indicated soil contamination. 7 Oct. 1999 NFA for UST approved.	None
129.9	Lube Oil UST	60 gallons	Diesel Test Cell No.4	Removed 1993	Yes, 1993 Closure Report indicated soil contamination. 7 Oct 1999 NFA for UST approved.	None

AOC = Area of Concern
Bldg. = Building
MISC = Miscellaneous
NFA = No Further Action
No. = Number
UST = Underground Storage Tank

4.58.3 Preliminary Assessment Resources

Table 4.58-4 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.58-4
AOC MISC 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
UST Program Notebook	Various	Duane Rollefson, SWDIV	Building 129 UST sampling and removal actions.
Removal and Closure of Underground Storage Tanks	1993	Foster Wheeler Environmental Services	Building 129 sampling results for test cells.
Environmental Baseline Survey	1996	LBNSY-ED	General Building 129 history.
Letter to Navy	1997	RWQCB	Further action recommendations for Building 129 USTs.
Base Realignment and Closure Cleanup Plan	1998	SWDIV	Building 129 UST information.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
MISC = Miscellaneous
RWQCB = Resource Water Quality Control Board
SWDIV = Southwest Division Naval Facilities Engineering Command
UST = Underground Storage Tank

4.58.4 PA Recommendations

Further action was recommended for AOC MISC 6 downgradient of former USTs 129.8 and 129.9 because the RWQCB stated in their 18 December 1997 letter that additional sampling was required. Sampling at USTs 129.8 and 129.9 was required because of the potential that previous spills or leaks occurred within these areas and because of TRPH detections in soil obtained during removal of these USTs in 1993. Further action was also required near two utility trenches because the RWQCB stated during an onsite April 1998 site walk that visual stains on the utility trench walls indicated the former presence of oil or fuel in these trenches. Groundwater flow in the area is generally to the north or northeast (BNI 1999), so samples were collected hydraulically downgradient to assess possible soil and groundwater contamination. The potential contaminants of concern for the diesel test cell areas include TPH, SVOCs including PAHs, and metals.

4.58.5 Number of Samples and Analyses

As described in Work Plan Addendum Number 2 (CDM Federal 1999), four soil and four groundwater samples were collected. Samples were collected for AOC MISC 6 locations on 1, 8 and 9 March 1999, at locations shown in Figure 4.58-7. Samples were analyzed for the analytical categories indicated in Table 4.58-5.

Table 4.58-5
AOC MISC 6 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Diesel	TPH-Motor Oil
Soil	4	4	4	4	4
Groundwater	4	4	4[(a)]	4	4

Notes:

(a) Dissolved metals.

AOC = Area of Concern
MISC = Miscellaneous
SVOC = Semivolatile Organic Compound
TPH = Total Petroleum Hydrocarbons
VOC = Volatile organic compound

4.58.6 Analytical Results

Analytical results for the AOC MISC 6 soil and groundwater samples are summarized in Tables 4.58-6 and 4.58-7 and in Figure 4.58-8.

4.58.6.1 Soil

The VOCs PCE and TCE were detected in two soil samples. PCE was detected in sample 99SY-MI6a-S-5 at a concentration of 0.004J mg/kg and in sample 99SY-MI6c-S-5 at a concentration of 0.001J mg/kg. TCE was detected in sample 99SY-MI6a-S-5 at a concentration of 0.006 mg/kg and in sample 99SY-MI6c-S-5 at a concentration of 0.001J mg/kg. TPH-diesel was detected in sample 99SY-MI6a-S-5 at a concentration of 1J mg/kg. No SVOCs or TPH-motor oil were detected in the soil samples at AOC MISC 6. Eleven of the 17 metals were detected in the soil samples.

4.58.6.2 Groundwater

The VOCs chloromethane and cis-1,2-dichloroethene were detected in the groundwater samples collected at AOC MISC 6. Cis-1,2-dichloroethene was detected in sample 99SY-MI6a-W-11.2 at a concentration of 0.0008J, in sample 99SY-MI6b-W-12.1 at a concentration of 0.0009J, and in sample 99SY-MI6c-W-10 at a concentration of 0.0008J. Chloromethane was detected in sample 99SY-MI6c-W-10 at a concentration of 0.0008J. TPH-diesel was detected in sample 99SY-MI6a-W-11.2 at a concentration of 0.1J and in sample 99SY-MI6d-W-10.6 at a concentration of 0.09J. No SVOCs or TPH-motor oil were detected in the

groundwater samples at AOC MISC 6. Nine of the 17 metals were detected in the groundwater samples.

4.58.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations exceeding their respective screening criteria.

4.58.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

TPH-diesel results lower than approximately 0.15 mg/L (2 of the 4 groundwater samples at this AOC) should be used with caution because false positives may have occurred, as described in Appendix O.

4.58.9 Recommendations

No further action is recommended for the Building 129 Diesel Test Cells (AOC MISC 6) because soil and groundwater samples results indicated that no analytes exceeded their respective screening criteria.

Table 4.58-6
AOC MISC 6 Sampling Results Summary for Organic Compounds
March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	No. of Detections above Criteria	No. of Samples	No. of Detections	Concentration (mg/L)	Screening Criteria for Water[b] (mg/L)	No. of Detections above Criteria
VOCs (60 analytes)[c]										
Chloromethane	4	0	ND	2.6	0	4	1	0.0008J	0.0015[e]	0
Cis-1,2-Dichloroethene	4	0	ND	150	0	4	3	0.0008J, 0.0009J, 0.0008J	0.006[e]	0
Tetrachloroethene	4	2	0.004J, 0.001J	16	0	4	0	ND	0.099	0
Trichloroethene	4	2	0.006, 0.001J	6.1	0	4	0	ND	0.027	0
SVOCs (64 analytes)	4	0	ND	N/A	0	4	0	ND	N/A	0
TPH-Diesel	4	1	1J	10,000[d]	0	4	2	0.1J, 0.09J	NA	0
TPH-Motor Oil	4	0	ND	50,000[d]	0	4	0	ND	25	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(e) No Ocean Plan criteria exist. Value presented for chloromethane is from Basin Plan and for cis-1,2-dichloroethene is the tap water PRG; these values are for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
MISC = Miscellaneous
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.58-7
AOC MISC 6 Sampling Results Summary for Metals
March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	4	3	0.13, 0.21, 0.36	750	11.3	0
Arsenic	4	4	2.0, 3.5, 2.4, 2.0	3.0	17.5	0
Barium	4	4	32.5J, 81.0J, 29.2, 61.4	100,000	275	0
Beryllium	4	0	ND	3,400	1.4	0
Cadmium	4	0	ND	930	1.7	0
Chromium	4	4	12.3, 17.0J, 8.8, 13.0	450	60.9	0
Cobalt	4	4	4.7, 8.3, 4.9, 7.1	29,000	24.5	0
Copper	4	4	5.4, 9.7, 5.2, 8.1	70,000	798.7	0
Lead	4	4	7.3, 3.1, 3.1J, 1.4	1,000	185.2	0
Mercury	4	0	ND	560	2.5	0
Molybdenum	4	0	ND	9,400	NA	0
Nickel	4	4	7.5, 12.4, 6.2, 10.0	37,000	32.6	0
Selenium	4	1	0.66J	9,400	1.4	0
Silver	4	0	ND	9,400	1.5	0
Thallium	4	0	ND	150	4.2	0
Vanadium	4	4	28.0, 29.2, 20.9, 25.9	13,000	84.9	0
Zinc	4	4	27.0, 38.5, 23.9, 36.6	100,000	844.9	0

Table 4.58-7 (continued)
AOC MISC 6 Sampling Results Summary for Metals
March 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Industrial PRG and Background**
Antimony	4	1	0.0123	1.2	0.0616	0
Arsenic	4	0	ND	0.008	0.0276	0
Barium	4	4	0.137J, 0.149J, 0.1J, 0.144	1[d]	0.1777	0
Beryllium	4	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	4	0	ND	0.001	0.0017	0
Chromium	4	1	0.0053	190	0.0029	0
Cobalt	4	0	ND	2.2[d]	0.0071	0
Copper	4	0	ND	0.003	0.1072	0
Lead	4	1	0.0043	0.002	0.028	0
Mercury	4	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	4	2	0.0144J, 0.0159	0.18[d]	NA	0
Nickel	4	1	0.0048	0.005	0.0958	0
Selenium	4	3	0.0082J, 0.0074, 0.006	0.015	0.040	0
Silver	4	1	0.0015	0.0007	0.0072	0
Thallium	4	0	ND	0.014	0.0075	0
Vanadium	4	0	ND	0.26[d]	0.0107	0
Zinc	4	1	0.0075	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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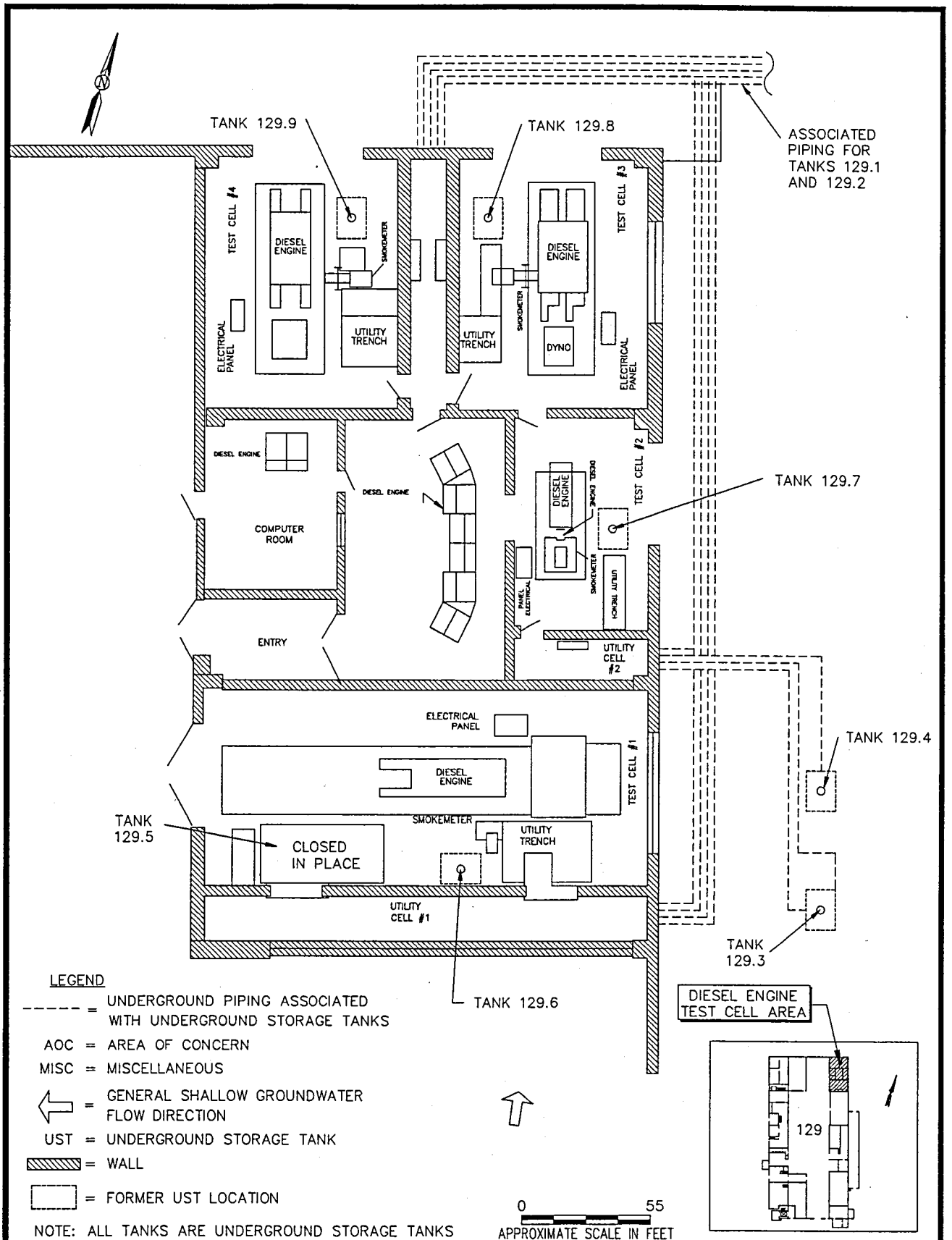

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 6 DIESEL TEST CELLS, BUILDING 129 INCLUDING USTs 129.3 TO 129.9 GROUP B AREAS OF CONCERN	FIGURE 4.58-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.58-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.58-2 Outside Building 129 Test Cells (AOC MISC 6) 1/14/98
Facing Southwest

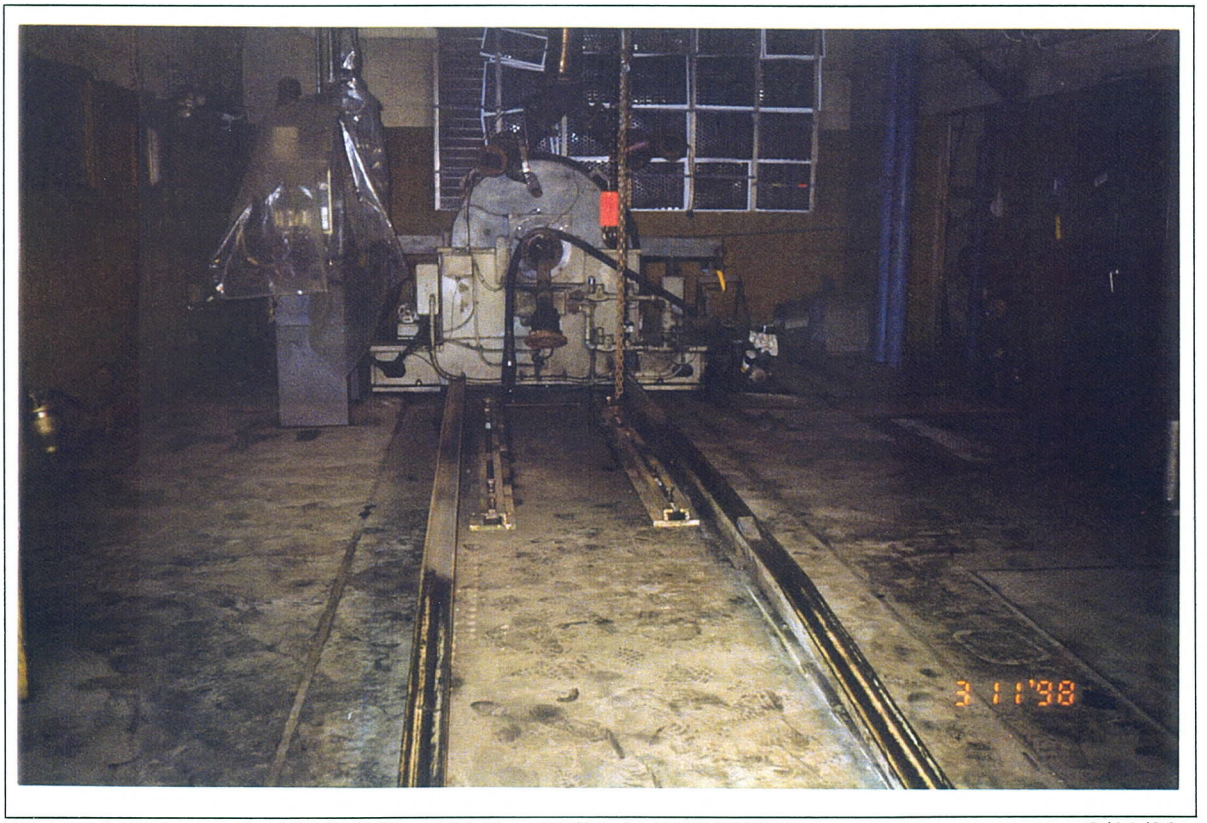


Figure 4.58-3 Inside Building 129 Test Cell 1 (AOC MISC 6) 3/11/98
Associated UST 129.5, Facing East

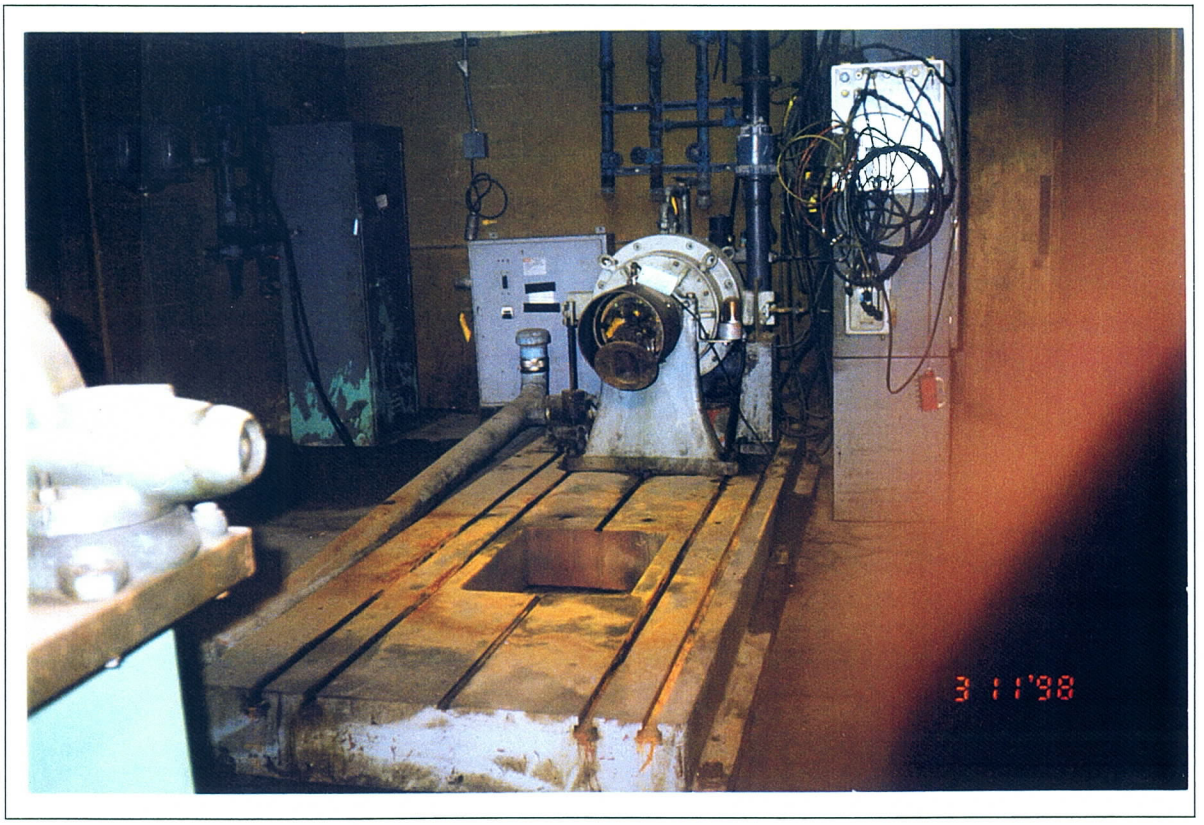


Figure 4.58-4 Inside Building 129 Test Cell 2 (AOC MISC 6), Associated UST 129.7, Facing South 3/11/98

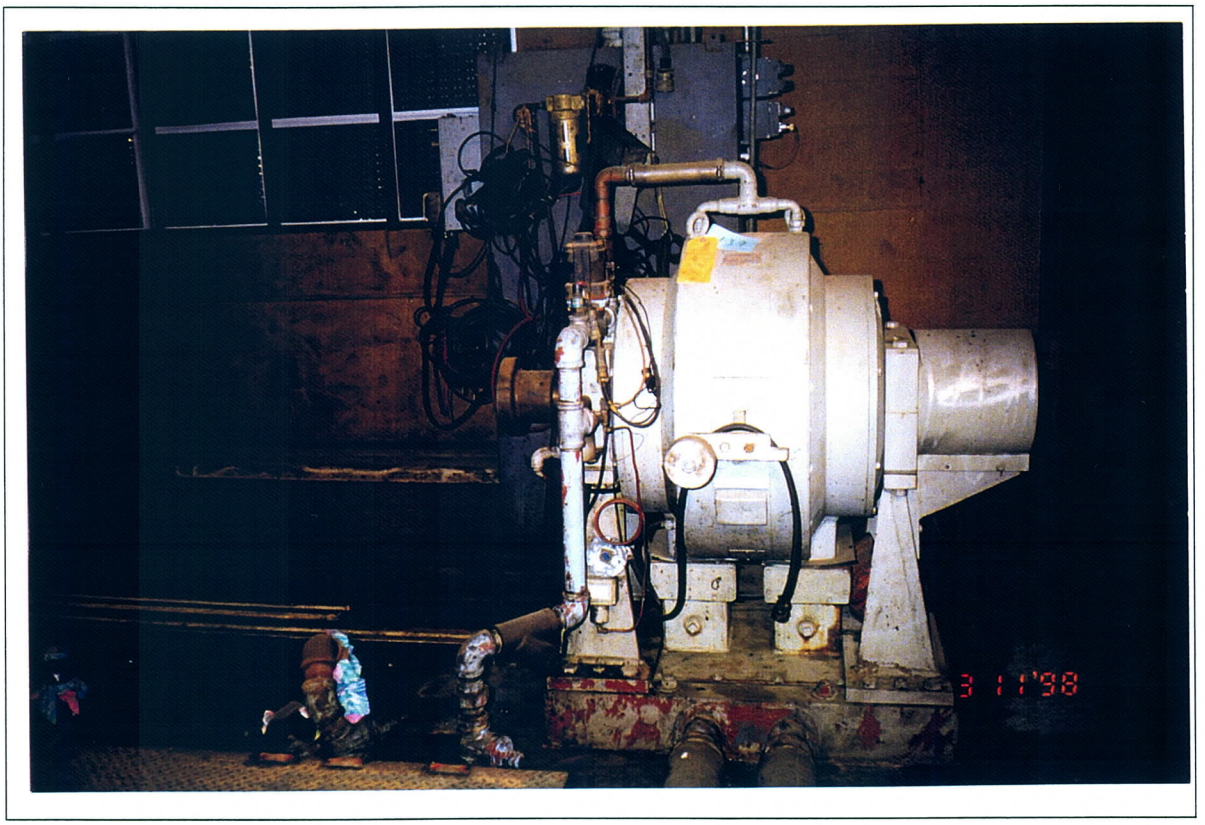


Figure 4.58-5 Inside Building 129 Test Cell 3 (AOC MISC 6), Associated UST 129.8, Facing East 3/11/98

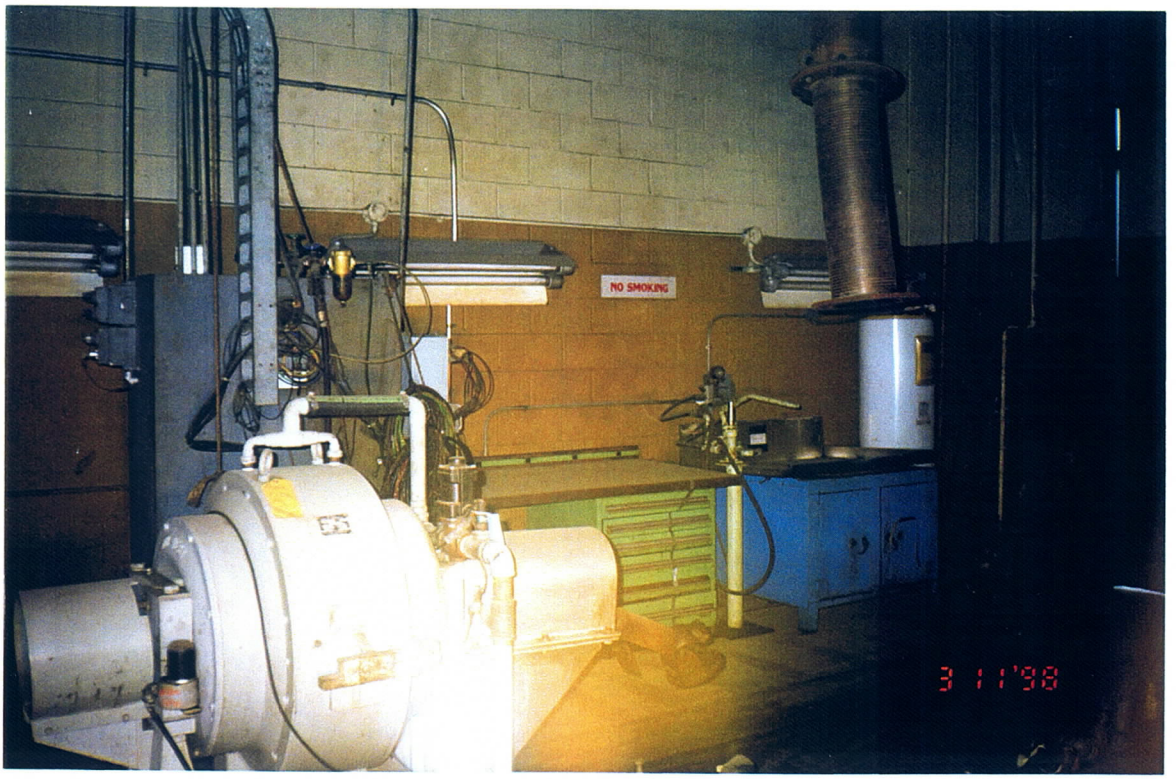
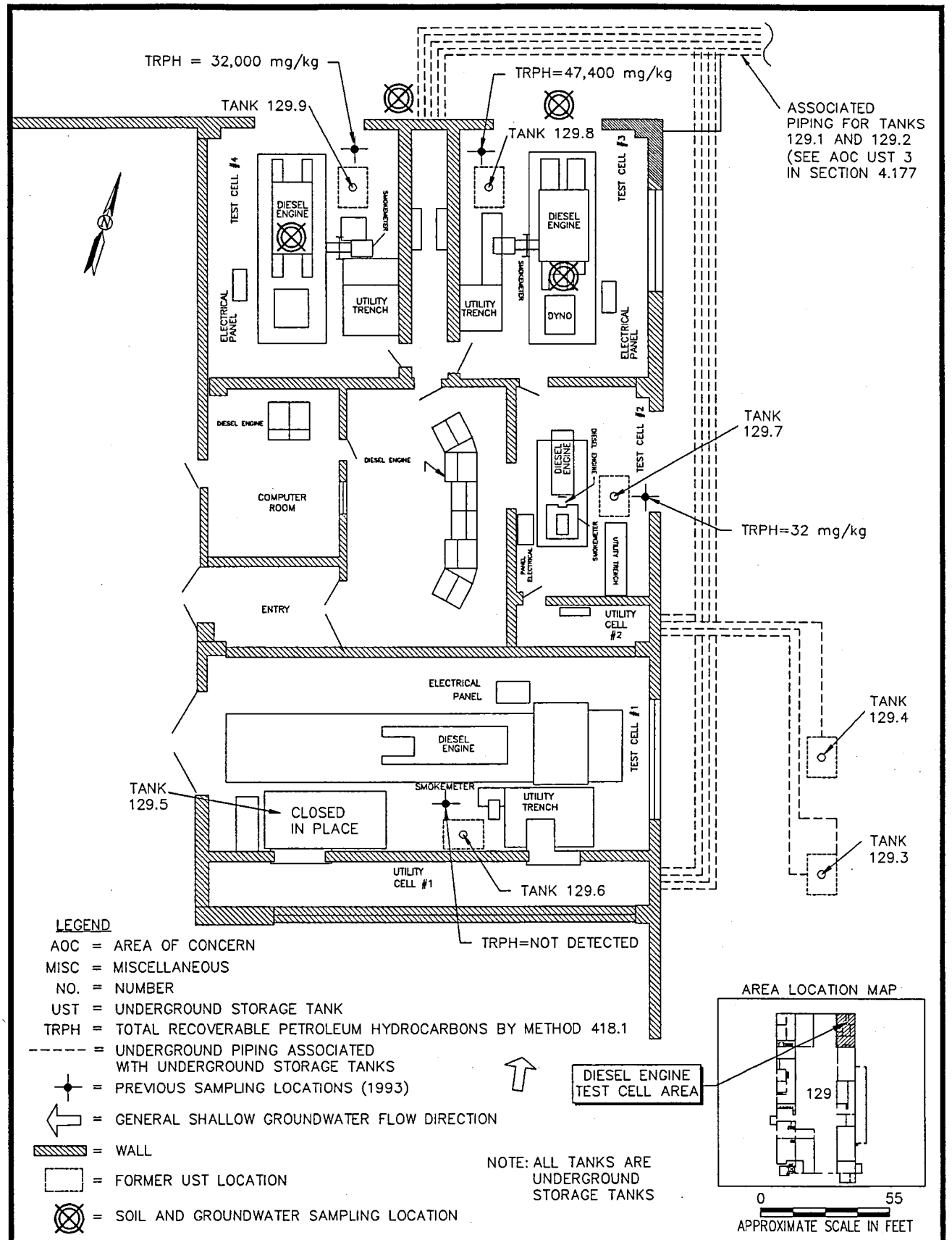


Figure 4.58-6 Inside Building 129 Test Cell 4 (AOC MISC 6) 3/11/98
Associated UST 129.9, Facing Northwest



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC MISC 6 DIESEL TEST CELL BUILDING 129 INCLUDING USTs 129.3 TO 129.9 GROUP B AREAS OF CONCERN	FIGURE 4.58-7
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.58-7	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

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99SY-MI6a-S-5	
ANALYTE	CONC. (mg/kg)
PCE	0.004J
TCE	0.006
TPH-DIESEL	1J

99SY-MI6a-W-11.2	
ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.0008J
TPH-DIESEL	0.1J

99SY-MI6c-S-5	
ANALYTE	CONC. (mg/kg)
PCE	0.001J
TCE	0.001J

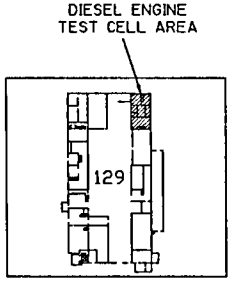
99SY-MI6c-W-10	
ANALYTE	CONC. (mg/L)
CHLOROMETHANE	0.0008J
CIS-1,2-DICHLOROETHENE	0.0008J

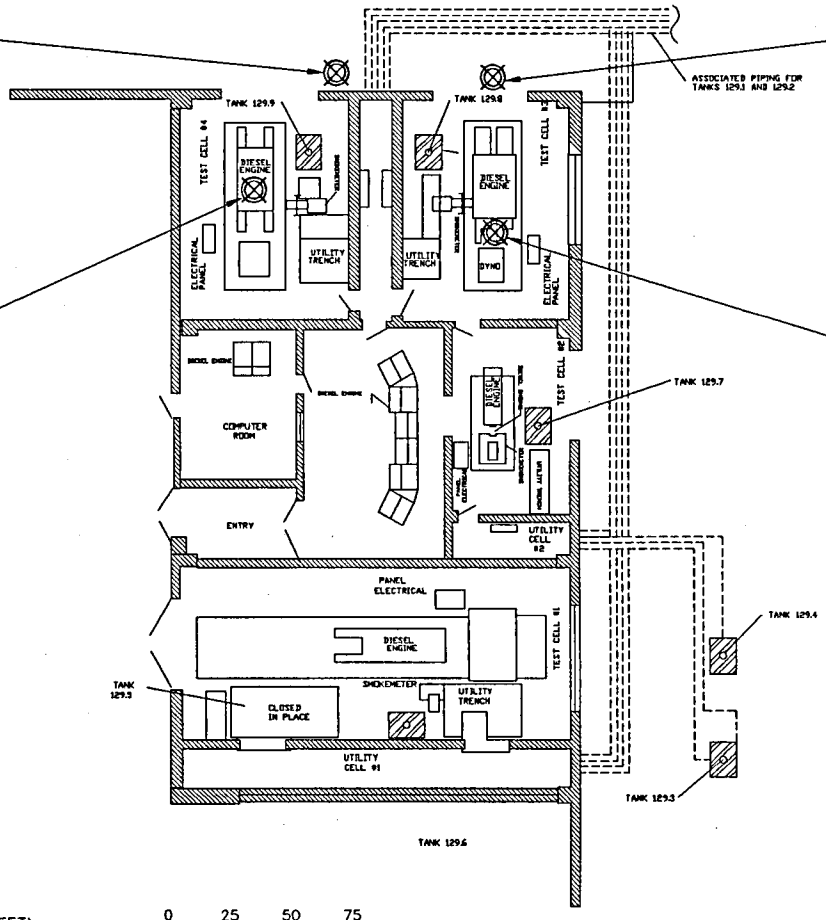
99SY-MI6b-S-5
(A)

99SY-MI6b-W-12.1	
ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.0009J

99SY-MI6d-S-5
(A)

99SY-MI6d-W-10.6	
ANALYTE	CONC. (mg/L)
TPH-DIESEL	0.09J





99SY-MI6a-S-5 = SAMPLE NAME (TYPICAL)
WHERE S=SOIL SAMPLE
WHERE W=WATER SAMPLE
WHERE 5=DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER

0 25 50 75
APPROXIMATE SCALE IN FEET

LEGEND
- - - - - = UNDERGROUND PIPING ASSOCIATED WITH UNDERGROUND STORAGE TANKS
MISC = MISCELLANEOUS
CONC. = CONCENTRATION
AOC = AREA OF CONCERN
PCE = PERCHLOROETHENE
TCE = TRICHLOROETHENE
J = ESTIMATED CONCENTRATION
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= SOIL AND GROUNDWATER SAMPLING LOCATION
= WALL
(A) = NO ORGANICS DETECTED, AND NO METALS ABOVE SCREENING CRITERIA

NOTE: ALL TANKS ARE UNDERGROUND STORAGE TANKS
THIS FIGURE SHOWS ONLY ORGANIC COMPOUNDS DETECTED. NO METALS EXCEEDED SCREENING CRITERIA.

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.58-8
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, FEBRUARY-MARCH 1999
AOC MISC 6, DIESEL TEST CELL BUILDING 129 INCLUDING USTs 129.3 TO 129.9

GROUP B AREAS OF CONCERN

FIGURE
4.58-8

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

4.58-11

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4.59 SHIPYARD GASOLINE STATION, INCLUDING USTs 356-362, 369-376, and 101.1-101.6 (AOC MISC 7)

A description of the shipyard gasoline station, including USTs 356-362, 369-376, and 101.1-101.6 (AOC MISC 7), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.59.1 to 4.59.4.

4.59.1 Site Description

Table 4.59-1 summarizes the location and characteristics of AOC MISC 7. Site maps are provided as Figures 4.59-1 and 4.59-2. A site photograph is shown in Figure 4.59-3.

Table 4.59-1
AOC MISC 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 7	South of Building 101	D-24	LBNSY gasoline service station; including 21 USTs.	21 USTs (See Table 4.59-4) and pumping island.	USTs of various sizes (See Table 4.59-4).

AOC = Area of Concern
MISC = Miscellaneous
No. = Number
UST = Underground Storage Tank

The service station was located along 9th Street between Sullivan Street and Avenue D. Twenty-one USTs existed at the service station, not all at the same time, as described in Section 4.59-2. In 1998 when the site reconnaissance was performed, no USTs were still in place at the former gasoline station. The pumping island and associated Building 356 no longer existed and the area was observed to be paved with asphalt.

4.59.2 Operational History and Waste Characteristics

Table 4.59-2 summarizes the operational history and waste characteristics.

Table 4.59-2
AOC MISC 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 7	Approximately 1943 to 1997	Refueling operations requiring kerosene, lube oil, gasoline, diesel fuel and other fuels.	Potential leaks from USTs and spills caused by misuse.	Unknown.

AOC = Area of Concern
MISC = Miscellaneous
No. = Number
UST = Underground Storage Tank

The tank number, year installed, capacity, construction material, substance stored, and current status are listed in Table 4.59-3. In 1945, fifteen USTs were installed at the LBNSY former

gasoline station (AOC MISC 7). The tanks were used to store gasoline, diesel fuel, white gas, kerosene, and lube oil and ranged in capacity from 500 to 10,000 gallons. In 1967, an additional three tanks were installed. Each of these tanks was used to store lube oil and ranged in capacity from 500 to 720 gallons. In 1986, two more tanks were installed; one final tank was installed at an unknown time. In 1968, many of the tanks installed in 1945 were removed; all of the others were removed prior to 1997 (SWDIV 1999). It was not clear whether UST 101.6 had been removed prior to 1997, but a 1999 geophysical survey confirmed that it no longer existed in the subsurface (Rollefson, pers. comm. 1999).

The tanks were connected to pumps with automatic shut-off valves. The gasoline station was used for LBNSY vehicles. A loading dock was located on the west side of the station for transfer of diesel fuel from the USTs to two 1,600-gallon diesel fuel tanker trucks. These trucks were presumably used for remote fueling of other vehicles and equipment throughout LBNSY. When not in use, the tanker trucks were stored in a concrete bermed area south of the gasoline station (AeroVironment 1996).

In the 1980s and 1990s, gasoline and diesel fuel were delivered to the USTs by tanker truck approximately once per week. The USTs were monitored using a leak detection system (Petrosonic III Gauging System) that measured the product level to within 0.0001 inch (AeroVironment 1996). USTs 101.1, 101.2, and 101.3 passed an inspection regarding the detection monitoring system in June 1990. At that time, those were the only operating tanks remaining at the gasoline station.

A 1997 Site Characterization and Analysis Penetrometer System (SCAPS) investigation identified gasoline, diesel, and MTBE in the soil south, southeast, and southwest of Building 101 and recommended that groundwater contamination be delineated in the area. 2,500 cubic yards of soil was excavated and treated by thermal desorption in 1997 (SWDIV 1999). A groundwater investigation in the area surrounding the gasoline station was conducted and petroleum-contaminated soil and groundwater was delineated to the east, south, and west. Two additional investigations will be performed in 1999 under separate projects: (1) further delineation of MTBE in groundwater, and (2) investigation of soil and groundwater beneath Building 101 near UST 101.6 (SWDIV 1999).

Table 4.59-3 summarizes information regarding the USTs used at the LBNSY gasoline station.

Table 4.59-3
Underground Storage Tanks (AOC MISC 7)

Tank No.	Year Installed	Capacity (gallons)	Tank Material	Substance Stored	Tank Status
101.1	1986	15,000	Steel	Regular Gasoline	Removed 1997
101.2	1986	15,000	Steel	Ethyl Gasoline	Removed 1997
101.3	1967	15,000	Steel	Diesel Fuel	Removed 1997
101.4	1967	1,000	Steel	Kerosene	Removed pre-1997
101.5	1967	5,000	Steel	Lube Oil	Removed pre-1993
101.6	Unknown	2,500	Unknown	Waste Oil	Removed pre-1998
356	1945	10,000	Unknown	Regular Gasoline	Removed 1968
357	1945	10,000	Unknown	Ethyl Gasoline	Removed 1997
358	1945	1,013	Unknown	White Gas	Removed 1968
359	1945	2,631	Unknown	Diesel Fuel	Removed 1968
360	1945	2,631	Unknown	Diesel Fuel	Removed 1968
361	1945	991	Unknown	Kerosene	Removed 1968
362	1945	991	Unknown	Kerosene	Removed 1968
369	1945	720	Unknown	Lube Oil	Removed 1993
370	1945	720	Unknown	Lube Oil	Removed 1968
371	1945	720	Unknown	Lube Oil	Removed 1968
372	1945	720	Unknown	Lube Oil	Removed 1968
373	1945	600	Unknown	Lube Oil	Removed 1968
374	1945	500	Unknown	Lube Oil	Removed 1968
375	1945	5,000	Unknown	Unknown	Removed pre-1993
376	1945	10,000	Unknown	Unknown	Removed pre-1993

Notes:

Source: LBNSY 1999 Base Closure Plan, Table 3-7 (SWDIV 1999).

AOC = Area of Concern
MISC = Miscellaneous
LBNSY = Long Beach Naval Shipyard
SWDIV = Southwest Division Naval Facilities Engineering Command

4.59.3 Preliminary Assessment Resources

Table 4.59-4 summarizes the resources used and interviews conducted in the PA evaluation.

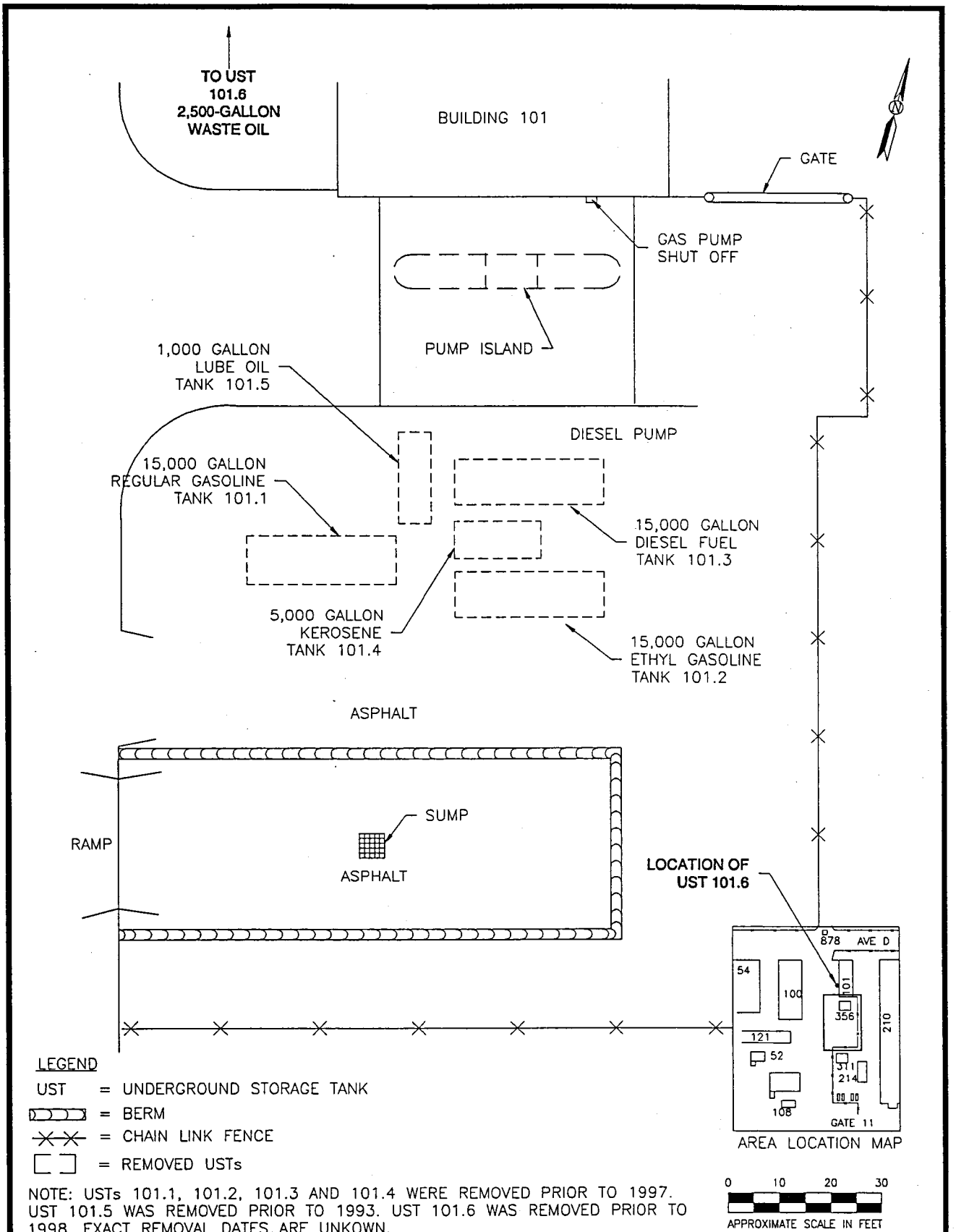
Table 4.59-4
AOC MISC 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Navy Map Number 21353	Unknown	LBNSY-PW	Former location and contents of USTs 101.1 through 101.5.
Navy Map Number 2186	1945	LBNSY-PW	Former location of USTs 358 to 362, and 369 to 376.
Navy Map Number 2552	1946	LBNSY-PW	Map shows tank area south of Building 101.
Underground Storage Tank Inventory List	1996	Rollefson, SWDIV	Location of USTs, size of USTs, years installed, and years removed.
LBNSY Oil SPCC	1996	AeroVironment Inc.	Describes the operating history of the gasoline station and the associated USTs.
Letter to Navy	1997	RWQCB	Information on the current status of the USTs and RWQCB recommendations on SCAPS Report.
Base Closure Plan	1998, 1999	SWDIV	USTs have been removed.
Personnel Communication	1999	Rollefson, SWDIV	1999 geophysical survey results indicate UST 101.6 is no longer in place.

BCP = Base Realignment and Closure Cleanup Plan
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
LBNSY-PW = Long Beach Naval Shipyard, Public Works
MISC = Miscellaneous
SCAPS = Site Characterization and Analysis Penetrometer System
SPCC = Spill Prevention Control and Countermeasures Plan
SWDIV = Southwest Division
UST = Underground Storage Tank

4.59.4 PA Recommendations

Further action for the LBNSY gasoline station is currently being addressed under the LBNSY Compliance Program and will not be addressed further under the AOC Investigation project. Under the Compliance Program, two additional investigations will be performed in 1999: (1) further delineation of MTBE in groundwater, and (2) investigation of soil and groundwater beneath Building 101 near UST 101.6.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 7 SHIPYARD GAS STATION, USTs 101.1 TO 101.6	FIGURE 4.59-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.59-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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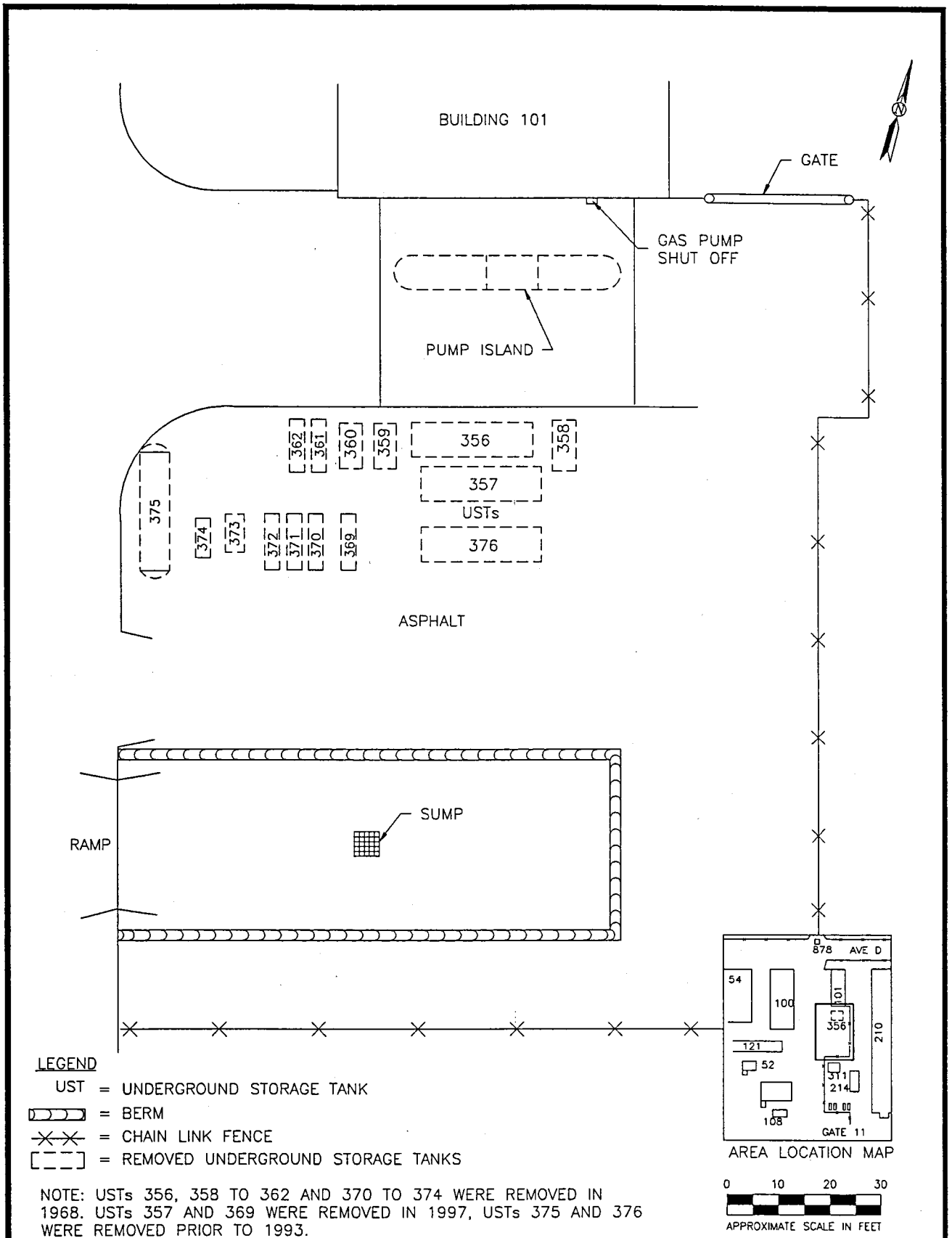

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC MISC 7 SHIPYARD GAS STATION, USTs 356 TO 362 AND USTs 369 TO 376 GROUP B AREAS OF CONCERN	FIGURE 4.59-2
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.59-2		
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.59-3 Former Gasoline Station Area (AOC MISC 7), Facing Northeast 9/22/98

4.60 TRANSPORTATION FACILITY YARD ASSOCIATED WITH BUILDING 54, (AOC MISC 8)

A description of the Transportation Facility Yard associated with Building 54 (AOC MISC 8), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.60.1 to 4.60.4. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.60.1 Site Description

Table 4.60-1 summarizes the location and characteristics of AOC MISC 8. A site map is provided as Figure 4.60-1. Site photographs are shown in Figures 4.60-2 through 4.60-5. Historical photographs of this AOC are shown in Figures 4.60-6 and 4.60-7.

Table 4.60-1
AOC MISC 8 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
MISC 8	Transportation Yard associated with Building 54, as well as Buildings 73, 121, and 122.	C- to F-21, C- to F-22	Storage and repair of vehicles such as trucks, cranes, forklifts, and earth moving equipment.	Buildings used for repair activities. One large yard for storage	B. 52 is 65 feet long by 61 feet in width by 14 feet in height. B. 54 is 224 feet long by 146 feet in width by 46 feet in height. B. 73 is 100 feet long by 40 feet in width by 18 feet in height. B. 121 is 201 feet long by 40 feet in width by 18 feet in height. B.122 was 101 feet long by 40 feet in width by 18 feet in height. Yard: approximately 475 feet by 800 feet.

AOC = Area of Concern
MISC = Miscellaneous
B. = Building
No. = Number

The transportation facility yard located around Buildings 54, 73, 121, and 122 (see Figure 4.60-1) (AOC MISC 8) was used for storage and repair of vehicles such as trucks, cranes, forklifts, and earth moving equipment. During the March 1998 site reconnaissance, the vehicle storage area was not used, was paved with asphalt, and was surrounded by a chain link fence; however, buildings, equipment, and approximately 20 vehicles were still located onsite. By February 1999, the equipment and vehicles were no longer on site. In general, the paved

surface appeared to be relatively clean with no observable heavy staining present. The yard is approximately 475 feet by 800 feet in size.

During the March 1998 site reconnaissance, several potential sources of contamination were identified:

- Two service pits located within Building 54 that were used for vehicle maintenance (Figure 4.60-8);
- An acid floor drain located inside the former battery repair shop located in the southeastern corner of Building 54 (Figure 4.60-9);
- A former acid drain catch basin located outside the battery shop at Building 54;
- A wash rack catch basin south of Building 54 that has been covered with asphalt (Figure 4.60-10);
- A former sump southeast of Building 54 and northeast of Building 121 that has been filled with asphalt (Figure 4.60-10);
- A former spray paint booth (Building 43);
- A grease trap/drain southeast of Building 122 (Figure 4.60-11);
- Asphalt-paved areas used for storing vehicles and equipment; and
- Trenches near Building 52.

Several lift jacks, lift jack pits, hydraulic pits, sumps, grease traps/OWS units, and drain pits were also identified. These structures, located at various locations as shown in Figure 4.60-12, were removed in 1999 under the UST Compliance Program.

4.60.2 Operational History and Waste Characteristics

Table 4.60-2 summarizes the operational history and waste characteristics.

Table 4.60-2
AOC MISC 8 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
MISC 8	1945 to 1996	Vehicle storage, maintenance, washing, painting, and tire and battery repair activities.	Potential spills from waste oil, gasoline, paint thinner, grease, caustics, acids, solvents, battery waste, and rinse water from washing activities. Potential leaks from sumps, drains, and pits.	Unknown. Reported spills: 15 gallons of gasoline in August 1989. 40 gallons of diesel in October 1991.

AOC = Area of Concern MISC = Miscellaneous No. = Number

Building 54 is located in the northeastern corner of the transportation yard and was used for vehicle maintenance, painting, and tire repair activities for LBNSY vehicles. The transportation shop was active at the shipyard from 1945 to 1996. The shop generated waste oil, paint thinner, grease, caustics, solvents, and battery waste from shop activities (A. L. Burke Engineers 1987). In several areas in Building 54, spills or leaks from equipment and maintenance activities possibly occurred at hydraulic lifts for heavy transportation equipment repair, the lift jack for heavy machine work, the gear oil sump, two service pits for oil and transmission fluid changes, and the acid floor drain associated with the battery repair shop (Archiplan 1988). Railroad tracks leading into the west entrance and terminating inside Building 54 indicate that railroad equipment or large machinery carried by rail may have been serviced at the facility. Two recent spills occurred within Building 54: a 15 gallon gasoline spill in August 1989 and a 40 gallon diesel spill in October 1991. These were contained and the surface was cleaned up according to Navy procedures. Many ground and floor stains within the building were identified during the March 1998 site reconnaissance at Building 54.

Building 122 is located within the yard and the bermed area east of Building 122 was used as a steam-cleaning area. An OWS associated with Building 122 was subsequently removed during the UST program in 1997 and was closed with no further action on 20 July 1998 (Geofon 1998). An additional OWS is located southeast of Building 122 and may have been used in association with Building 122 automotive engine steam cleaning. During its operation, collected water was recycled.

4.60.3 Preliminary Assessment Resources

Table 4.60-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.60-3
AOC MISC 8 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing Number 8524	1963	LBNSY-PW	Map showing design alterations performed on the service pits located in Building 54.
Subsurface Utility Maps - Zone 3, Plats 5 and 6	1960s	LBNSY	Shows locations of subsurface structures at the time the maps were prepared.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at the Building 54 Transportation Yard.
Update of Environmental Evaluation for Naval Shipyard, Long Beach, California	1988	Archiplan Urban Design Collaborative	Building 54 layout (e.g., hydraulic lifts, sumps).
Hazardous Waste Tiered Permitting Project	1994	ERM West	Separators and sumps located in the Building 54 Transportation Yard.
Environmental Baseline Survey	1996	LBNSY-ED	General information regarding field inspections for the Transportation Yard associated with Building 54.
Draft Supplemental Groundwater Investigation Report, Installation Restoration Program Sites 9, 12, and 13	1998	Bechtel National, Inc.	Groundwater flow direction.
Draft Underground Storage Tank and Oil Water Separator Removal Report	1998	Geofon	OWS removal action performed in the Transportation Yard associated with Building 54.
Personal communication	1998	Ron Johnson, LBNSY	General information regarding maintenance and storage activities for the Transportation Yard associated with Building 54.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
LBNSY-PW = Long Beach Naval Shipyard, Public Works
MISC = Miscellaneous
OWS = Oil/Water Separator

4.60.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC MISC 8 because of potential spills and leaks associated with the transportation yard and shop. Soil and groundwater samples were recommended to be collected near potential contaminant source areas. The likely contaminants of concern based on the type of operations (e.g., mechanical repair, cleaning, storage of vehicles) were identified as VOCs, SVOCs, metals, PCBs, cyanide, and TPH (CDM Federal 1999).

4.60.5 Numbers of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), eleven soil and eleven groundwater samples were collected at this AOC on 23, 24 February 1999 and 9 March 1999. These samples were analyzed for the analytical categories of concern as shown in Table 4.60-4. One groundwater sample, located near the acid floor drain in the southeastern corner of

Building 54 where batteries were stored, could not be collected due to poor groundwater recovery. Sufficient volume could be collected for only VOCs and TPH-gasoline analysis.

Sampling locations are shown in Figure 4.60-12.

Table 4.60-4
AOC MISC 8 Number of Samples and Analyses

Location/Matrix	VOCs	SVOCs	Metals	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	PCBs	Cyanide
Soil	11	11	11	11	11	11	11	11
Groundwater	11	10 [b]	11[a]	11	10 [b]	10 [b]	10 [b]	10 [b]

Notes:

a) Dissolved metals

b) One groundwater sample, located near the acid floor drain in the southeastern corner of Building 54 where batteries were stored, could not be collected due to poor groundwater recovery. Sufficient volume could be collected for only VOCs and TPH-gasoline analysis.

AOC = Area of Concern
MISC = Miscellaneous
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.60.6 Analytical Results

The analytical results are discussed below and summarized in Tables 4.60-5 and 4.60-6, as well as in Figure 4.60-13.

4.60.6.1 Soil

The organic detections for soil samples collected at AOC MISC 8 are shown in Table 4.60-5 and Figure 4.60-13. VOCs and TPH-gasoline were not detected. The SVOCs benz(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene were detected in sample 99SY-MI8h-S-1 located in a parking lot. TPH-diesel, TPH-motor oil, and PCBs were also detected in 2, 4, and 3 of the soil samples, respectively. The highest TPH concentrations detected were located at MI8j, adjacent to a drain/OWS that is scheduled for removal in 1999 under the Compliance Program.

Metal detections for soil samples collected at AOC MISC 8 are shown in Table 4.60-6. Fourteen of the 17 metals were detected in the soil samples. Cyanide was not detected in any of the soil samples collected.

4.60.6.2 Groundwater

The organic detections for groundwater samples collected at AOC MISC 8 are shown in Table 4.60-5 and Figure 4.60-13. VOCs and PCBs were not detected in the groundwater samples. The SVOC BEHP was detected in six of the groundwater samples, at concentrations ranging from 0.001 to 0.088 mg/L. TPH-gasoline, TPH-diesel, and TPH-motor oil were also detected in 2, 4, and 1 groundwater sample, respectively; none exceeded 0.3 mg/L.

Metal detections for groundwater samples collected at AOC MISC 8 are shown in Table 4.60-6. Eleven of the 17 metals were detected in the groundwater samples. Cyanide was not detected in any of the groundwater samples collected.

Static water table measurements were collected from temporary piezometers installed at three groundwater sampling locations. Each temporary piezometer consisted of open-ended lengths of 1½-inch outer diameter PVC casing, with slotted screen sections placed below the estimated water table depth of 11 feet bgs. Each temporary piezometer was left in place overnight to better enable measurement of static water levels. The water table was encountered at depths of 10.9, 10.8, and 11.7 feet bgs at sampling locations MI8b, MI8h, and MI8, respectively. These locations were selected because they were far apart from each other. Water table elevations were calculated based on ground surface elevations referenced to the local MLLW datum. Water table elevations of -4.25, -4.79, and -4.67 feet MLLW were determined for sampling locations MI8b, MI8h, and MI8I, respectively. These data suggest a local groundwater flow direction toward the southwest. Based on previous investigation findings for the area (BNI 1999 and CDM Federal 1999b) and a comparison of these data with temporary piezometer measurements made at the Chemical Cleaning Facility (AOC HIST 8; Section 4.44 of this report), the regional groundwater flow direction tends to be toward the north to northeast. Locally, flow directions may vary; however, there are insufficient local data to accurately assess groundwater flow direction and gradient based on the limited number of temporary piezometer measurements (3) and lack of groundwater monitoring wells at or near AOC MISC 8.

4.60.7 Data Comparison to Screening Criteria

Four of the six groundwater samples with detections of BEHP (MI8d, MI8e, MI8i and MI8k) had concentrations reported above the screening criteria level of 0.0035 mg/L. The highest concentration of 0.088 mg/L was detected in sample 99SY-MI8e-W-13.4, located in the center of the site near a filled-in sump and former wash rack catch basin. The other three BEHP concentrations that exceeded screening criteria (0.013, 0.018J, and 0.020 mg/L) were located in the central portion of the site roughly along a northeast-southwest line. Resampling performed in August 1999 at the location where 0.088 mg/L had been detected did not confirm such a high concentration. Resampling results showed 0.0029 and 0.016 mg/L for two different types of tubing used to collect the sample. In addition, laboratory blanks indicated the presence of phthalates during this resampling effort, suggesting that laboratory contamination may have caused or contributed to detections of phthalates reported in site samples (see Appendix N for letter report and regulatory concurrence).

No other analytes exceeded screening criteria for the soil and groundwater samples.

4.60.8 Data Validation and Usability

Field QC samples were collected as previously discussed in Section 3.5.1, laboratory QA was performed and monitored, as described in Section 3.5.2, and data validation was performed for

samples, as described in Section 3.5.3. For this site, no data were rejected, and data qualifiers were applied to samples as described in Appendix O.

BEHP was not a suspected analyte of concern from the Transportation Facility activities; rather, it was analyzed for because it is detectable by US EPA Method 8270C. Method 8270C was used to analyze samples from this AOC primarily to detect PAHs that may have been present in oils and greases used at the Transportation Facility. It is possible that the BEHP detections are a result of laboratory contamination, as described in Appendix O. The Nine Group B AOCs Report, dated 24 November 1998, recommended no further action at two AOCs where BEHP was reported at concentrations of 0.005 and 0.009 mg/L in groundwater samples (above the Ocean Plan criterion of 0.0035 mg/L). Regulatory agency approval for no further action was received for these two AOCs (CDM Federal 1998d).

TPH-gasoline results lower than approximately 0.3 mg/L (both detections), as well as TPH-diesel results lower than approximately 0.15 mg/L (3 of the 4 samples in which it was detected) should be used with caution because false positives may have occurred, as described in Appendix O.

Because sufficient groundwater volume for sample 99SY-MI8C-W-12 could not be collected, several analyses could not be performed for this sample. But no significant data gaps resulted for three reasons: 1) over 90% of the samples at this AOC were able to be collected and analyzed, 2) soil and groundwater samples were collected near the end of the subsurface pipe that drains the battery storage room acid floor drain (location MI8d), and 3) sufficient volume was collected for analysis of metals which were the main contaminants of concern for the battery storage room.

4.60.9 Recommendations

No further action is recommended for the Transportation Facility Yard (AOC MISC 8). BEHP was detected above screening criteria levels in some groundwater samples, but it was not originally a suspected site contaminant, resampling efforts did not confirm the highest concentration, and BEHP is suspected to have been caused by laboratory contamination. No other analytes exceeded screening criteria for the soil and groundwater samples.

No Further Action is recommended for the hydraulic lifts and jacks under the AOC Investigation project, but Further Action will be performed under the existing UST Compliance Program.

Table 4.60-5
AOC MISC 8 Sampling Results Summary for Organic Compounds
February-March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]	11	0	ND	NA	0	11	0	ND	NA	0
SVOCs (64 analytes)[c]										
Benz(a)anthracene	11	1	0.09J	3.6	0	10[e]	0	ND	$8.8x10^{-6}$	0
Benzo(b)fluoranthene	11	1	0.14J	3.6	0	10[e]	0	ND	$8.8x10^{-6}$	0
Bis(2-ethylhexyl)phthalate (BEHP)	11	0	ND	210	0	10[e]	6	**0.001J, 0.013, 0.088, 0.018, 0.001J, 0.020**	0.0035	4
Butyl Benzyl Phthalate	11	0	ND	930	0	10[e]	0	ND	7.3[f]	0
Chrysene	11	1	0.098J	360	0	10[e]	0	ND	$8.8x10^{-6}$	0
Fluoranthene	11	1	0.16J	37,000	0	10[e]	0	ND	0.015	0
Pyrene	11	1	0.21J	26,000	0	10[e]	0	ND	$8.8x10^{-5}$	0
TPH-Gasoline	11	0	ND	1,000[d]	0	11	2	0.14, 0.03J	NA	0
TPH-Diesel	11	2	6J, 110	10,000[d]	0	10[e]	4	0.1J, 0.05J, 0.1J, 0.2J	NA	0
TPH-Motor Oil	11	4	15, 27, 11J, 590	100,000[d]	0	10[e]	1	0.3J	25	0
PCBs - Aroclor 1260	11	3	0.087, 0.004J, 0.004J	1.3	0	10[e]	0	ND	N/A	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Regional Water Quality Control Board *Interim Site Assessment and Cleanup Guidebook,* dated May 1996. Values are for soils > 150 feet above the nearest drinking water aquifer.
(e) Not enough volume could be collected inside the battery storage area because of poor groundwater recovery. Sample ID 99SY-MI8c-W-12.
(f) No Ocean Plan criteria exist. Value presented is for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.60-6
AOC MISC 8 Sampling Results Summary for Metals and Cyanide
February-March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	11	9	0.77, 0.34J, 0.54, 0.25, 0.44, 0.56, 0.21, 0.32, 1.2	750	11.3	0
Arsenic	11	11	13.9, 2.9, 2.3, 3.8, 3.2, 5.8, 1.9, 3.1, 5.0, 4.5, 10	3.0	17.5	0
Barium	11	11	171, 34.6, 61.6, 53.7, 186, 86.7, 15.8, 61.5, 110, 82.1, 132	100,000	275	0
Beryllium	11	0	ND	3,400	1.4	0
Cadmium	11	5	0.23, 0.17J, 0.14, 0.099, 0.19	930	1.7	0
Chromium	11	11	39.3, 11.7, 22.1, 12.4, 21.5, 17.5, 7.0, 17.7 , 17.9, 16.6, 54.6	450	60.9	0
Cobalt	11	11	19.4, 5.1, 3.9, 6.2, 15.8, 9.8, 2.1, 6.2 , 9.9, 10.5, 14.5	29,000	24.5	0
Copper	11	11	47.4, 4.4, 44.5, 7.0, 15.7, 11.1, 2.6, 7.7 , 14.5, 11.5, 25.3	70,000	798.7	0
Lead	11	11	10.8, 16.4J, 29.7J, 2.0, 3.1, 2.3, 2.3, 5.8, 4.7, 2.1, 8.6	1000	185.2	0
Mercury	11	5	0.074, 0.15, 0.023, 0.019, 0.060	560	2.5	0
Molybdenum	11	2	0.17, 1.8	9,400	NA	0
Nickel	11	11	29.9, 5.8, 5.8, 8.9, 20.6, 13.2, 4.3, 16.4, 14.5, 13.1, 31.7	37,000	32.6	0
Selenium	11	2	0.68J, 0.61	9,400	1.4	0
Silver	11	0	ND	9,400	1.5	0
Thallium	11	0	ND	150	4.2	0
Vanadium	11	11	69.2, 35.0J, 20.5, 25.2, 32.5, 31.6, 8.4, 26.0, 37.4, 32.4, 49.8	13,000	84.9	0
Zinc	11	11	93.4, 30.9, 23.1, 29.1, 43.9, 45.7, 15.7, 29.3, 43.5, 49.4, 73.7	100,000	844.9	0
Cyanide	11	0	ND	35	N/A	0

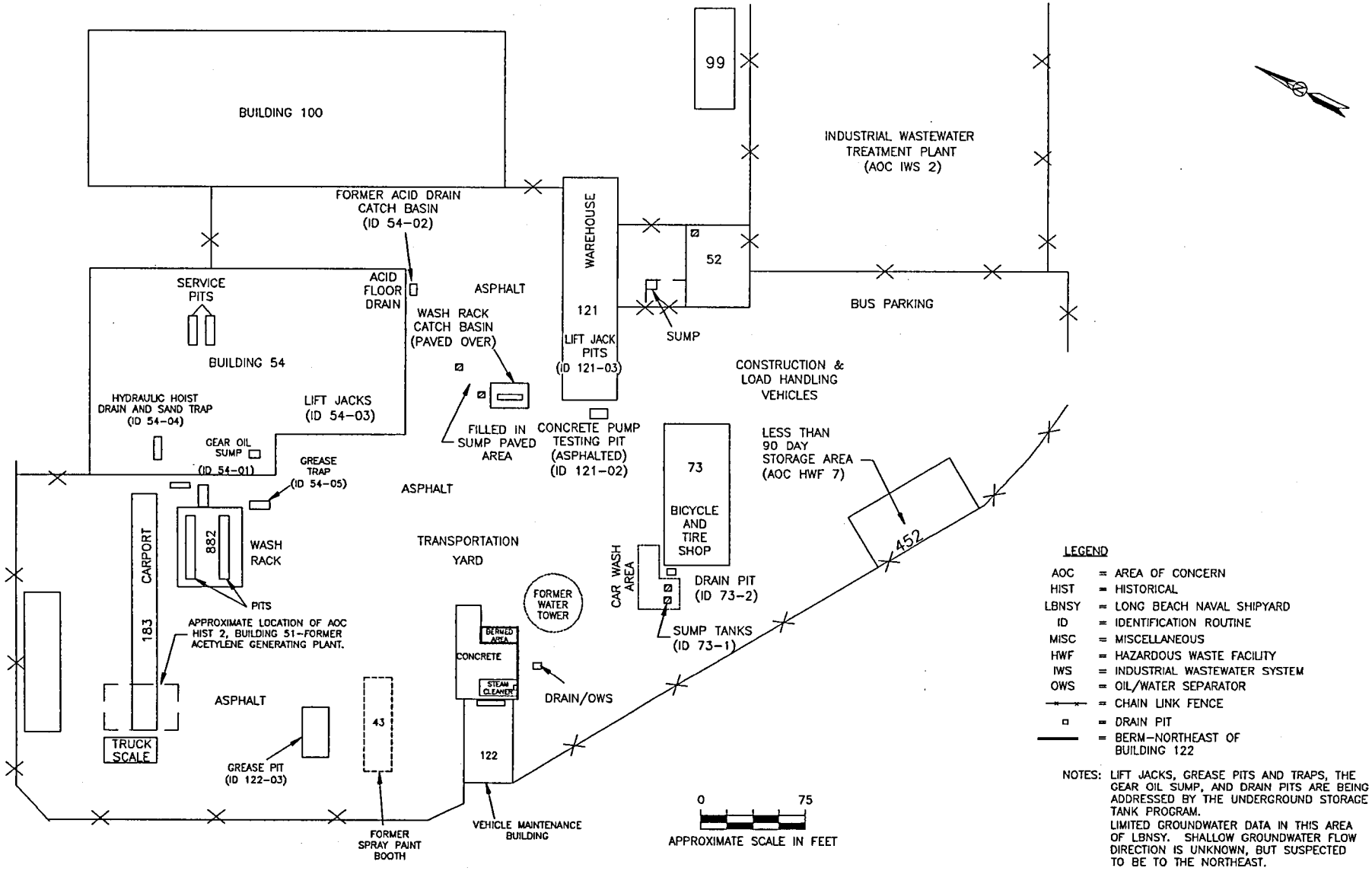
Table 4.60-6 (continued)
AOC MISC 8 Sampling Results Summary for Metals and Cyanide
February-March 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	11	2	0.009, 0.095,	1.2	0.0616	0
Arsenic	11	0	ND	0.008	0.0276	0
Barium	11	11	0.0805, 0.0876, 0.19, 0.137, 0.153, 0.137, 0.153, 0.0584, 0.0747, 0.141, 0.0824	1[d]	0.1777	0
Beryllium	11	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	11	0	ND	0.001	0.0017	0
Chromium	11	2	0.0073, 0.0075	190	0.0029	0
Cobalt	11	6	0.0028, 0.0032, 0.0037, 0.0034, 0.0032, 0.0035	2.2[d]	0.0071	0
Copper	11	0	ND	0.003	0.1072	0
Lead	11	3	0.0043J, 0.0034, 0.0037,	0.002	0.028	0
Mercury	10[e]	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	11	10	0.0077, 0.0097, 0.236, 0.0088, 0.0062, 0.0067, 0.0077, 0.0073, 0.01, 0.0113,	0.18[d]	NA	0
Nickel	11	7	0.0265, 0.0057, 0.0062, 0.0059, 0.0028, 0.0065, 0.0045J	0.005	0.0958	0
Selenium	11	5	0.0024, 0.004, 0.0024, 0.0034, 0.0067	0.015	0.040	0
Silver	11	3	0.0011, 0.0031, 0.0013	0.0007	0.0072	0
Thallium	11	0	ND	0.014	0.0075	0
Vanadium	11	2	0.0006, 0.0089	0.26[d]	0.0107	0
Zinc	11	4	0.0058, 0.0769, 0.0056, 0.0068	0.020	0.291	0
Cyanide	10 [e]	0	ND	0.01	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(e) Not enough volume could be collected inside the battery storage area because of poor groundwater recovery. Sample ID 99SY-MI8c-W-12.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 7/99
FN: 4.60-1
MODIFIED BY: L. Brown
PROJECT NO. 6210-014

AOC MISC 8
TRANSPORTATION FACILITY YARD

GROUP B AREAS OF CONCERN

FIGURE
4.60-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.60-1

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Figure 4.60-2 Transportation Yard Associated with Building 54 (AOC MISC 8) Facing East 2/12/98

Figure 4.60-3 Transportation Yard Associated with Building 54 (AOC MISC 8) Facing Southeast 2/12/98

Figure 4.60-4 Vehicle Storage Area, East Side (AOC MISC 8) Facing North 9/23/98

Figure 4.60-5 Vehicle Storage Area, West Side (AOC MISC 8) Facing North 9/23/98

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	TRANSPORTATION YARD, LONG BEACH NAVAL SHIPYARD 1978	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 2/99 FN: 4.60-6	GROUP B AREAS OF CONCERN	4.60-6
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

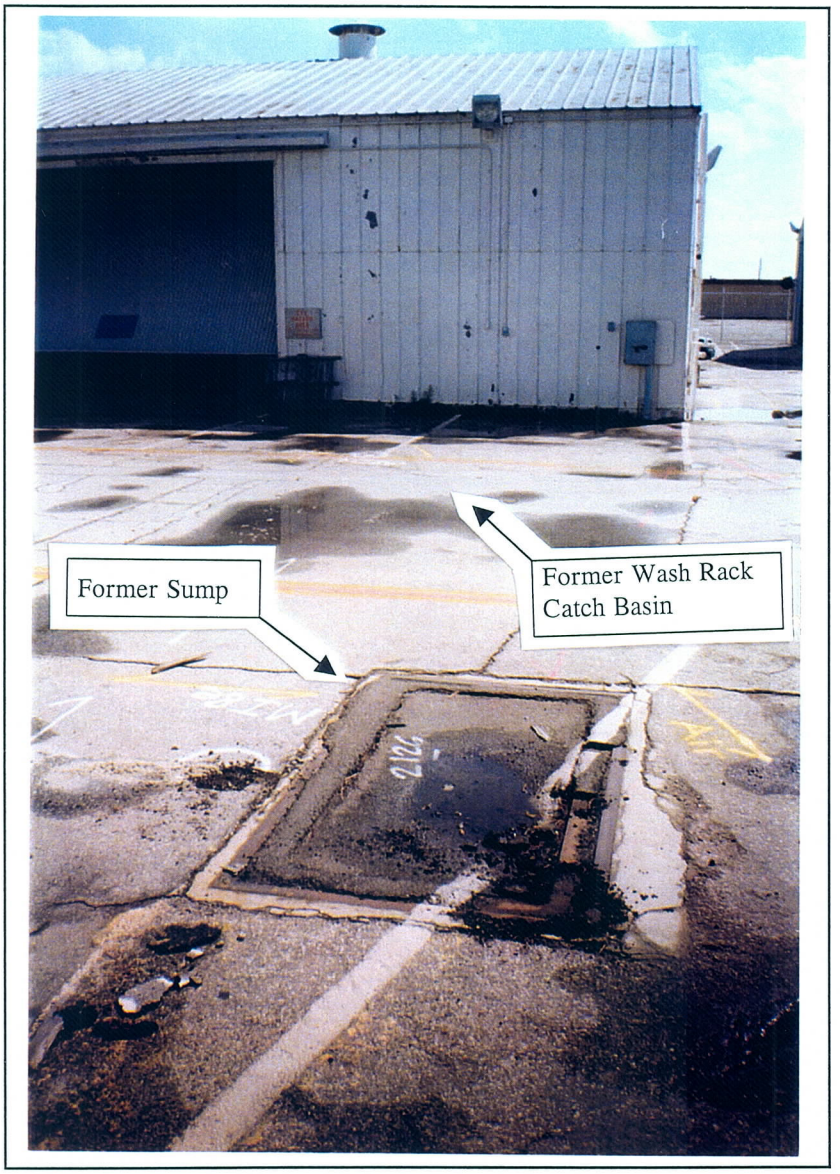
4.60-15

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	TRANSPORTATION YARD, LONG BEACH NAVAL SHIPYARD 1978	FIGURE 4.60-7
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. — DATE: 2/99 — FN: 4.60-7	GROUP B AREAS OF CONCERN	
MODIFIED BY: J. Brown — PROJECT NO. 6210-014		

4.60-7

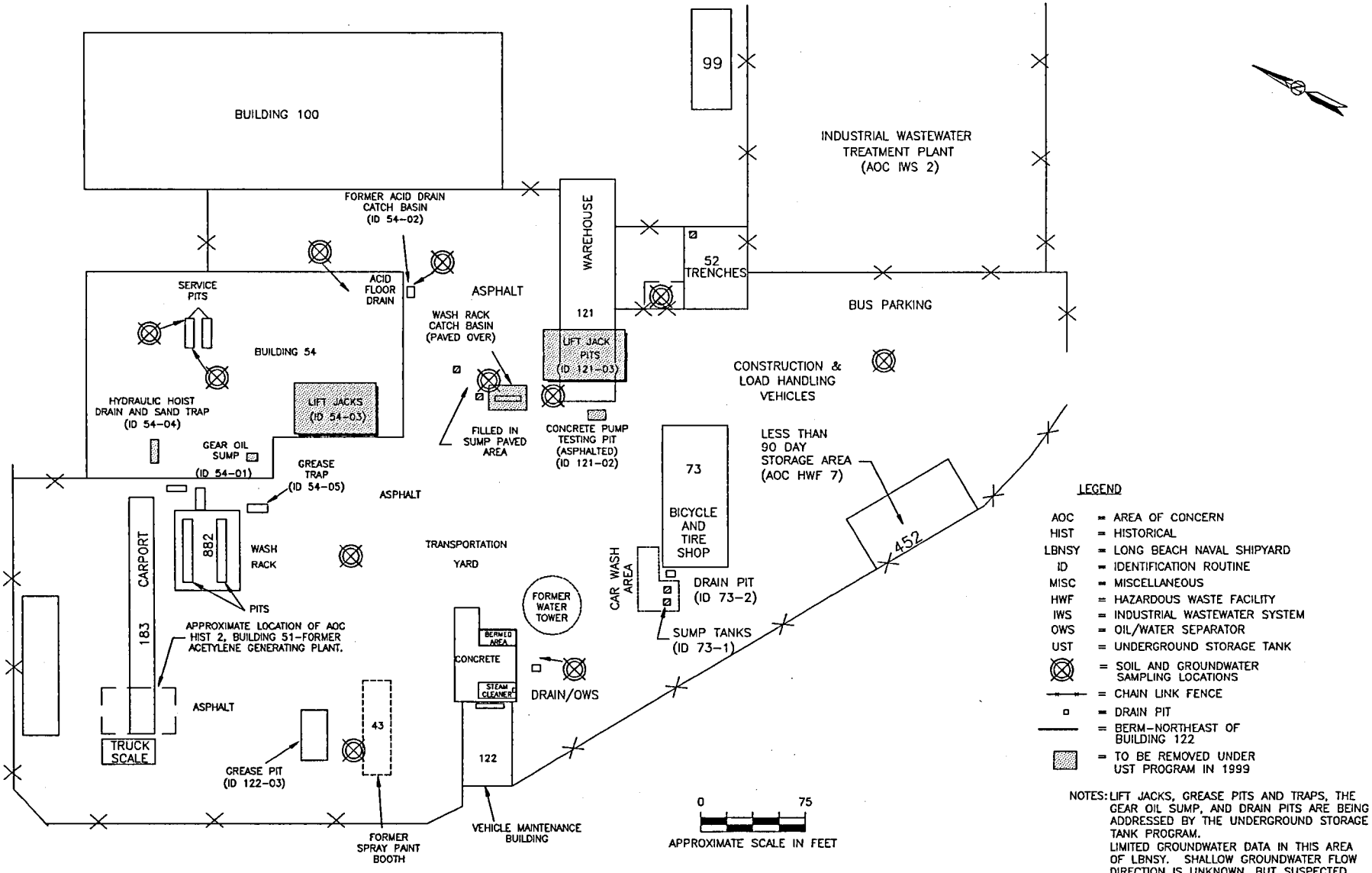
Figure 4.60-8 Two Vehicle Service Pits within Building 54 (AOC MISC 8) Facing Northwest 9/23/98

Figure 4.60-9 Battery Shop and Floor Drain (AOC MISC 8), Building 54, Facing Northeast 3/12/98



4.60-10 Transportation Yard (AOC MISC 8) Former Sump and Wash Rack Catch Basin, Facing South 3/9/99

Figure 4.60-11 Grease Trap/Drain Outside of Building 122 (AOC MISC 8)
Facing Northwest 12/15/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.60-12
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING LOCATIONS
AOC MISC 8
TRANSPORTATION FACILITY YARD

GROUP B AREAS OF CONCERN

FIGURE
4.60-12

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.60-20

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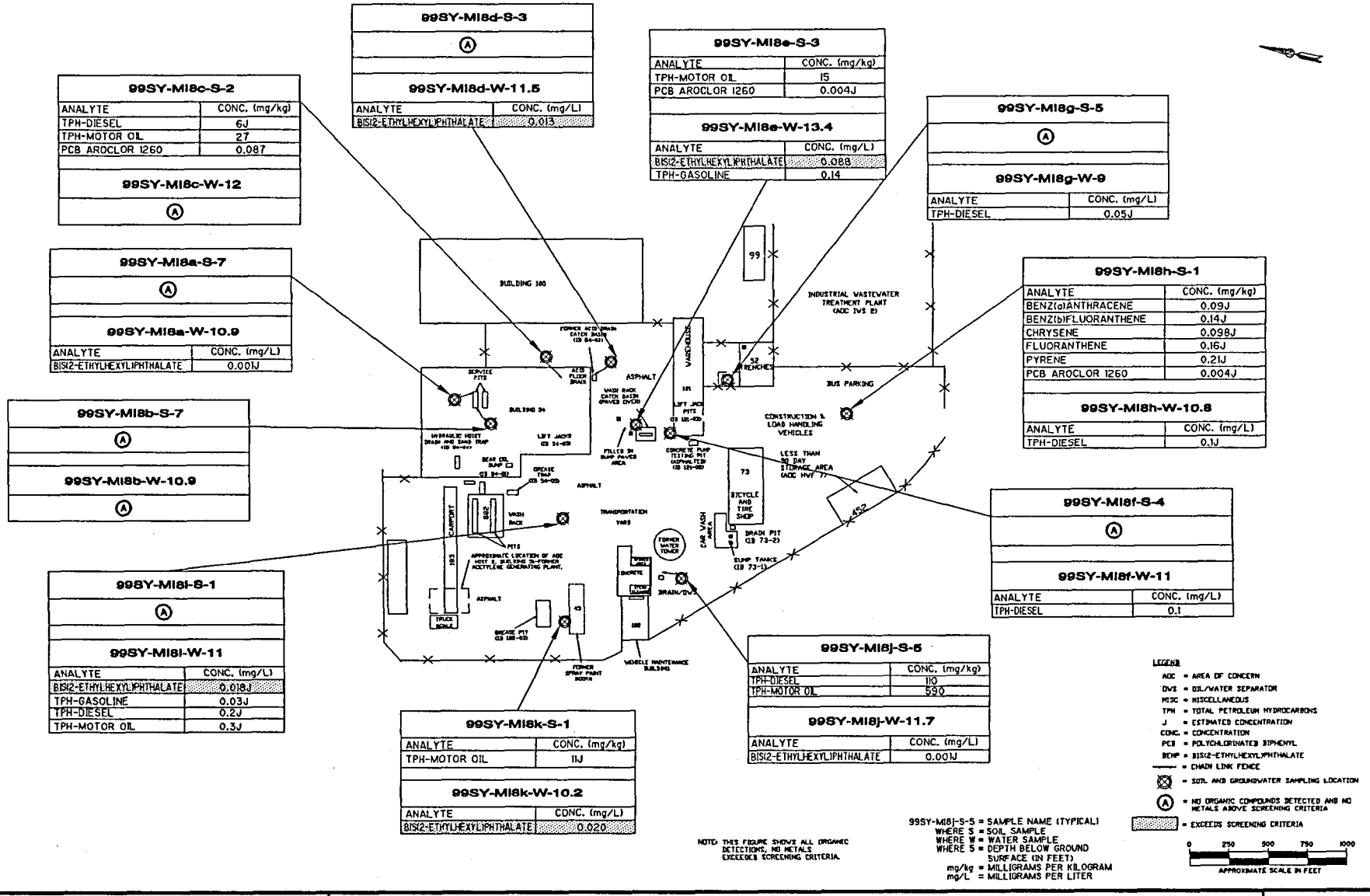

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING RESULTS SUMMARY, FEBRUARY-MARCH 1999 AOC MISC 8 TRANSPORTATION FACILITY YARD GROUP B AREAS OF CONCERN	FIGURE 4.60-13
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.60-13	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

4.60-21

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4.61 BUILDING 130 VENTILATION GASKET REMOVAL AREA (AOC PCB 16)

A description of the Building 130 Ventilation Gasket Removal Area (AOC PCB 16), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.61.1 to 4.61.4. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.61.1 Site Description

Table 4.61-1 summarizes the location and characteristics of AOC PCB 16. A site map is provided as Figure 4.61-1. Site photographs shown in Figures 4.61-2 and 4.61-3.

Table 4.61-1
AOC PCB 16 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PCB 16	Building 130 (North compound)	H-29	Compound north of Building 130 where gaskets were removed from ventilation systems.	Canopied area at the northwestern corner of the Building 130 north compound.	Compound: 150 feet by 100 feet.

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyl

The fenced compound north of Building 130 was used for removing PCB-contaminated gaskets from ventilation systems used on ships and in LBNSY buildings. The AOC includes two SAPs (addressed in Section 4.64) where used PCB-contaminated gaskets and coveralls (any item of work clothing worn by shop personnel that may have been contaminated by PCBs during work activities) were stored. No ground surface staining was observed during the January 1998 site reconnaissance. The compound area consisted of a chain-link fence enclosing the north end of Building 130. The eastern and western sides of the compound were covered with canopies and the ground surface was observed to be asphalt.

Paint stains on the asphalt pavement adjacent to the southwestern corner of the ventilation gasket removal area were observed by regulatory agencies during a site walk on 15 April 1998. The faded paint stains covered approximately 3 feet by 6 feet of asphalt and appear to have resulted from a paint spill(s).

4.61.2 Operational History and Waste Characteristics

Table 4.61-2 summarizes the operational history and waste characteristics.

Table 4.61-2
AOC PCB 16 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PCB 16	Unknown to approximately 1996.	Removing gaskets from PCB-contaminated ventilation systems from ships and LBNSY buildings.	PCB-contaminated gaskets, nuts, bolts, and coveralls.	Gaskets: approximate annual quantity 310 pounds. Coveralls: approximate annual quantity 600 pounds.
	Unknown	Paint storage or usage.	Paint.	Unknown. Stains covered 3 feet by 6 feet area.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number
PCB = Polychlorinated Biphenyl
VOC = Volatile Organic Compounds

According to a 1994 Hazardous Waste Tiered Permitting Survey conducted by ERM-West, the north compound of Building 130 was used for handling ship vents containing PCB-contaminated gaskets. Gaskets were separated from the vents and the vents were washed, scrubbed, and rinsed on a work table in the Building 130 compound. The wastewater was collected and shipped out as hazardous waste. The metal vents were sent to the scrap metal yard operated by the Defense Reutilization and Marketing Office (DRMO) for recycling.

Installation of SAPs 130-17-1 and 130-17-2 (see Section 4.64) was initiated by LBNSY personnel in November 1993 (LBNSY-ED 1993). An estimated 310 pounds of PCB-contaminated gaskets were generated from the shipboard ventilation systems on an annual basis. An estimated 600 pounds of PCB-contaminated coveralls were generated annually from the cleaning of the ventilation systems (LBNSY-ED 1993). The volume of oil and PCBs absorbed in the felt gaskets and remaining on the coveralls was likely relatively low.

The source of paint stains on the asphalt pavement is unknown. The 3 feet by 6 feet size of the paint stains suggests that a locker for storing paints may have been located in this locked, fenced area.

4.61.3 Preliminary Assessment Resources

Table 4.61-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.61-3
AOC PCB 16 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
SAP Files	1993	LBNSY-ED	Initiation date of PCB SAP, including estimated quantities generated.
Draft Hazardous Waste Tiered Permitting Report	1994	ERM-West Inc.	Tiered permitting information for PCB scrubbing unit and associated wastewater.
SAP Database	1996	LBNSY-ED	SAP information, including waste quantity and type.
Personnel Interview	1998	Johnson, LBNSY	No recollection of site activities.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
PCB = Polychlorinated Biphenyl
SAP = Satellite Accumulation Point

4.61.4 PA Recommendations

Based on PA findings, further action was recommended for AOC PCB 16 because of the operations involving PCB-contaminated materials, undocumented procedures and waste handling practices, and the uncertainty of the time period during which operations were conducted. One PCB wipe sample was recommended for this location. In addition, paint stains just west of the area indicate a small release of paints to the ground. One soil and one groundwater sample were recommended at this location (CDM Federal 1998a).

4.61.5 Number of Samples and Analyses

As proposed in the Work Plan (CDM Federal 1998a), one PCB wipe sample, one soil sample, and one groundwater sample were collected. Soil and groundwater samples were collected on 10 June 1998 and the wipe sample was collected on 17 June 1998. Each sample was analyzed for the analytical categories of concern, as shown in Table 4.61-4. The soil sample was collected at a depth of 1 foot below the asphalt pavement surface, while the groundwater sample was collected at 10 feet bgs. The PCB wipe sample was collected from the ground surface. Sampling locations and results are shown in Figure 4.61-4.

Table 4.61-4
AOC PCB 16 Number of Samples and Analyses

Matrix	VOCs	Metals	PCBs
Soil	1	1	0
Groundwater	1	1[(a)]	0
Wipe	0	0	1

Notes:
(a) Dissolved Metals
AOC = Area of Concern PCBs = Polychlorinated Biphenyls VOCs = Volatile Organic Compounds

Analytical results for the AOC PCB 16 soil and groundwater samples are presented in Tables 4.61-5 and 4.61-6.

4.61.6 Analytical Results

Results for wipe, soil, and groundwater samples are summarized below.

4.61.6.1 PCB Wipe

As indicated in Table 4.61-5, no PCBs were detected in the wipe sample collected.

4.61.6.2 Soil

No VOCs were detected in the sample, as indicated in Table 4.61-5.

Of the 17 metals analyzed, 12 were detected, as indicated in Table 4.61-6.

4.61.6.3 Groundwater

As indicated on Table 4.61-5, no VOCs were detected in the groundwater sample.

Nine of 17 metals were detected in the groundwater sample, as indicated in Table 4.61-6.

4.61.7 Data Comparison to Screening Criteria

No PCBs were detected in the wipe sample, so no criteria were exceeded.

No organic compounds were detected in the soil and groundwater samples, so no criteria were exceeded.

No metals were detected in the soil or groundwater samples at concentrations in excess of both their respective industrial PRGs and background levels.

4.61.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.61.9 Recommendations

No further action is recommended for the Building 130 Ventilation Gasket Removal Area (AOC PCB 16) because surface wipe, soil, and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.61-5
AOC PCB 16 Sampling Results Summary for Organic Compounds
June 1998

Analytical Parameter	No. of Samples	No. of Detections	Concentration ($\mu g/cm^2$)	Screening Criteria[a] ($\mu g/cm^2$)	No. of Detections above Criteria
			PCB WIPE		
PCBs	1	0	ND	100	0
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration**	**Screening Criteria[b]**	**No. of Detections above Criteria**
			SOIL		
VOCs (60 analytes)	1	0	ND	N/A	0
			GROUNDWATER		
VOCs (60 analytes)	1	0	ND	N/A	0

Notes:

(a) 40 CFR 761 (IV) (C) (2) d for low contact outdoor surfaces.
(b) See Section 3.7 for screening criteria.

AOC = Area of Concern
CFR = Code of Federal Regulations
Mg/kg = Milligrams per Kilogram
N/A = Not Applicable
ND = Not Detected
No. = Number
PCB = Polychlorinated Biphenyl
PRG = Preliminary Remediation Goal
$\mu g/cm^2$ = Micrograms per Square Centimeter
VOC = Volatile Organic Compounds

Table 4.61-6
AOC PCB 16 Sampling Results Summary for Metals
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above PRGs and Background Level**
Antimony	1	0	ND	750	11.3	0
Arsenic	1	1	1.1	3.0	17.5	0
Barium	1	1	106J	100,000	275	0
Beryllium	1	0	ND	3,400	1.4	0
Cadmium	1	0	ND	930	1.7	0
Chromium	1	1	13.1	450	60.9	0
Cobalt	1	1	5.1	29,000	24.5	0
Copper	1	1	15.8J	70,000	798.7	0
Lead	1	1	3.5J	1000	185.2	0
Mercury	1	1	0.076	560	2.5	0
Molybdenum	1	1	1.1	9,400	NA	0
Nickel	1	1	7.0	37,000	32.6	0
Selenium	1	1	0.56	9,400	1.4	0
Silver	1	0	ND	9,400	1.5	0
Thallium	1	0	ND	150	4.2	0
Vanadium	1	1	16.0	13,000	84.9	0
Zinc	1	1	31.4	100,000	844.9	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligram per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
PCB = Polychlorinated Biphenyl
PRG = Preliminary Remediation Goal

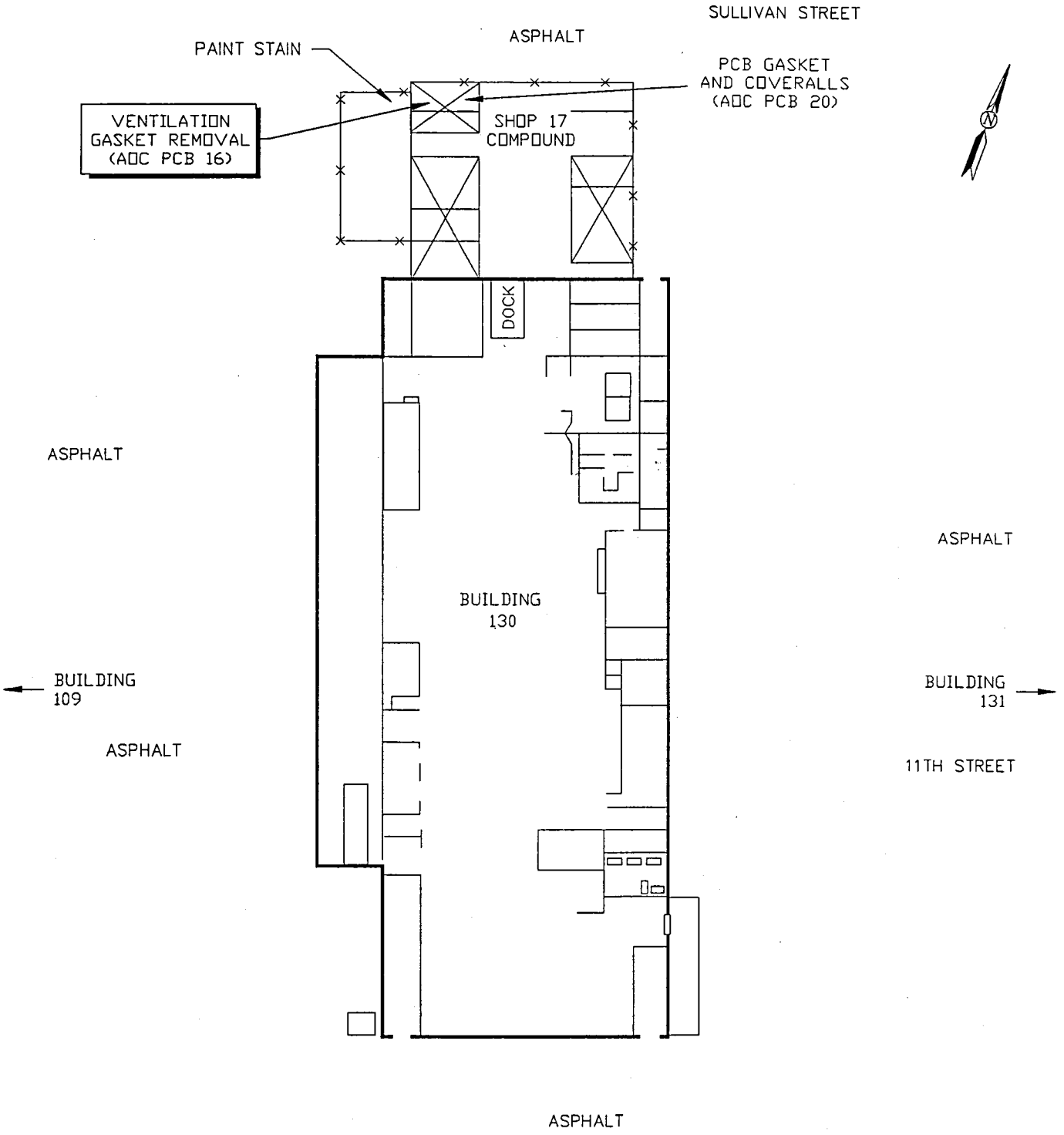
Table 4.61-6 (continued)
AOC PCB 16 Sampling Results Summary for Metals
June 1998

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[a] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Screening Criteria and Background Levels**
Antimony	1	0	ND	1.2	0.0616	0
Arsenic	1	1	0.0066	0.008	0.0276	0
Barium	1	1	0.133J	1[c]	0.1777	0
Beryllium	1	0	ND	0.000033	0.002	0
Cadmium	1	0	ND	0.001	0.0017	0
Chromium	1	1	0.0045J	190	0.28315	0
Cobalt	1	1	0.0024J	2.2[c]	0.0071	0
Copper	1	1	0.0101	0.003	0.1072	0
Lead	1	0	ND	0.002	0.028	0
Mercury	1	0	ND	0.00004	0.0009	0
Molybdenum	1	1	0.0116J	0.18[c]	NA	0
Nickel	1	1	0.0026J	0.005	0.0958	0
Selenium	1	1	0.0073	0.015	0.040	0
Silver	1	0	ND	0.0007	0.0072	0
Thallium	1	1	0.0017J	0.014	0.0075	0
Vanadium	1	0	ND	0.26[c]	0.0107	0
Zinc	1	0	ND	0.02	0.291	0

Notes:

(a) See Section 3.7 for screening criteria.
(b) Background levels are listed in Appendix L.
(c) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/L = Milligrams per liter
NA = Not Available
ND = Not Detected
No. = Number
PCB = Polychlorinated Biphenyl



LEGEND

PCB = POLYCHLORINATED BIPHENYL
AOC = AREA OF CONCERN
-×-×-×- = CHAIN LINK FENCE

0 50 100
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PCB 16 VENTILATION GASKET REMOVAL BUILDING 130	FIGURE 4.61-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.61-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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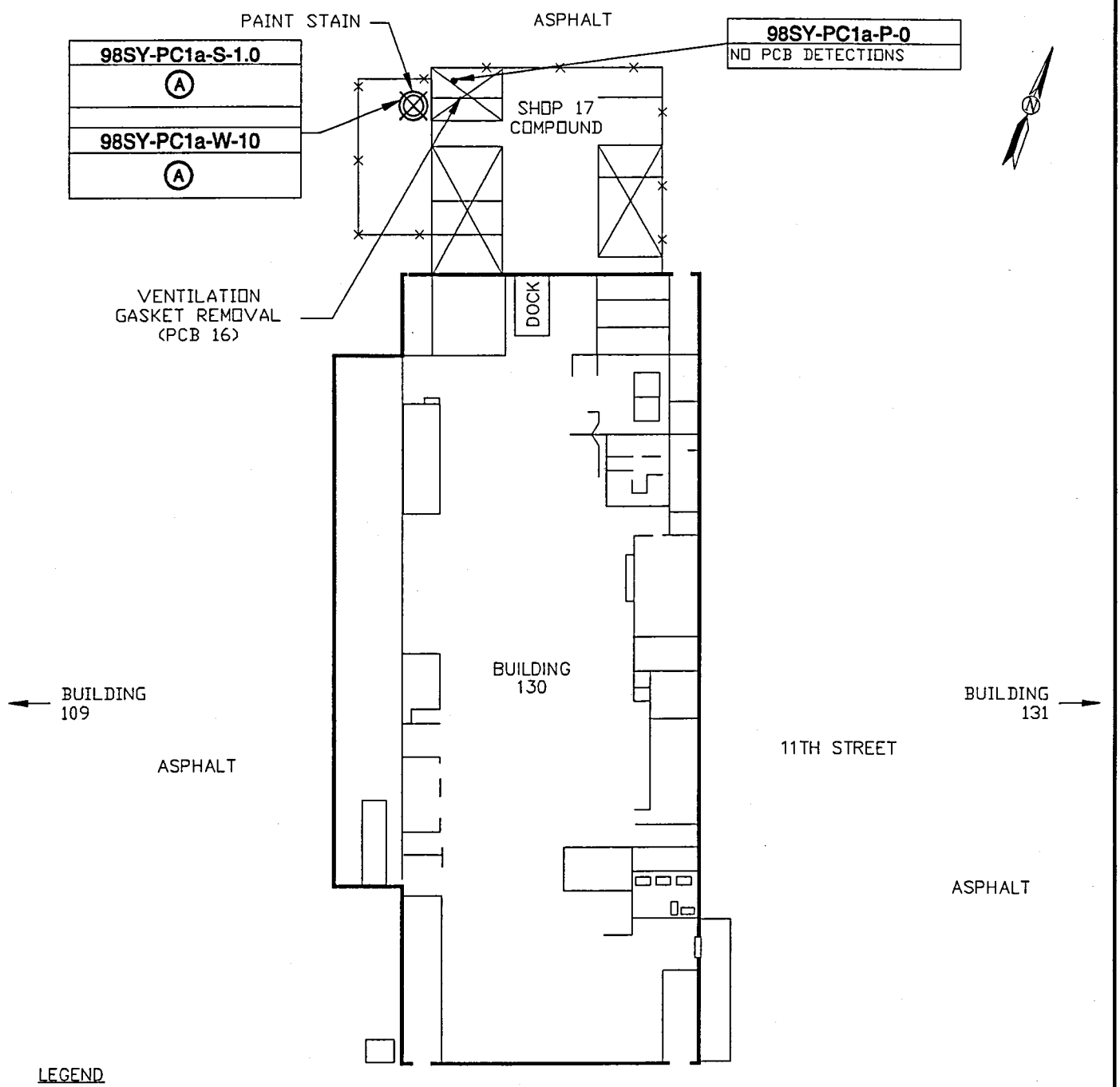
Figure 4.61-2 Building 130, PCB Gaskets and Coveralls (AOC PCB 16 and 20) Facing West 9/22/98

Figure 4.61-3 West Side of the Building 130 North Compound (AOC PCB 16 and 20) Facing Southwest 9/22/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 6/99
FN: 4.61-4
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING LOCATIONS AND RESULTS SUMMARY, JUNE 1998
AOC PCB 16
VENTILATION GASKET REMOVAL
BUILDING 130
GROUP B AREAS OF CONCERN

FIGURE
4.61-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.62 EQUIPMENT #618444 SUMP A AND SUMP B, BUILDING 132 (AOC PCB 17)

A description of Equipment #618444 Sumps A and B (AOC PCB 17), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.62.1 to 4.62.4. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.62.1 Site Description

Table 4.62-1 summarizes the location and characteristics of AOC PCB 17. A site map is provided as Figure 4.62-1. A site photograph is shown in Figure 4.62-2.

Table 4.62-1
AOC PCB 17 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PCB 17	Western side of Building 132, 1st Intermediate floor near Column O-14.	I-31, J-31	Hydraulic press with two associated sumps that used PCB oils.	One piece of machinery (sumps are part of the machine).	Approximately 2 feet wide by 4 feet long by 8 feet tall.

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyls

This AOC consists of a hydraulic press and two attached sumps that contained oil. The press, located inside Building 132 in the machine shop on the first intermediate floor (see Figure 4.62-1), was used for fabricating metal parts. The sumps are part of the machine and were likely used for containing lubricating/cooling oil for the press.

During the March 1998 site reconnaissance, the floor beneath the press was observed to be composed of wood blocks, similar to the main floor of Building 132. The wood blocks were meant to ease the strain of standing by the operator.

4.62.2 Operational History and Waste Characteristics

Table 4.62-2 summarizes the operational history and waste characteristics.

Table 4.62-2
AOC PCB 17 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PCB 17	Unknown	Metal parts fabrication.	Potential for spills on the floor areas surrounding the press.	Unknown.

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyls

The equipment with PCB oils was last inspected in 1996 according to the LBNSY Building Inspection Log (LBNSY-ED 1996b). During a previous investigation, oil samples were collected from the two sumps (Sumps A and B) and analyzed for PCBs. Sump A results showed 50.26 parts per million (ppm) PCBs and Sump B results showed 51.00 ppm PCBs (LBNSY-ED 1996c). Oil from the sumps was removed and disposed properly.

4.62.3 Preliminary Assessment Resources

Table 4.62-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.62-3
AOC PCB 17 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Environmental Baseline Survey	1996	LBNSY-ED	PCB test results from LBNSY machinery.
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	PCB test results from LBNSY machinery.
Personnel Interview	1998	Mazepi, LBNSY	Provided LBNSY equipment inventory information to locate the press.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
PCB = Polychlorinated Biphenyls

4.62.4 PA Recommendations

Based upon PA findings further action was recommended for AOC PCB 17 because of the potential for past spills and/or leaks at the hydraulic press. Investigational PCB wipe samples from the floor area around the press were proposed in Work Plan Addendum Number 2 (CDM Federal 1999).

4.62.5 Number of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), four wipe samples of the floor were collected. Samples were collected on 9 March 1999 and analyzed for PCBs as shown in Table 4.64-4. Sampling locations are shown in Figure 4.62-4.

Table 4.62-4
AOC PCB 17 Number of Samples and Analyses

Matrix	PCBs
Wipe	4

AOC = Area of Concern No. = Number PCBs = Polychlorinated Biphenyls

4.62.6 Analytical Results

PCBs were detected in each sample, at concentrations ranging from 1.6 to 3.7 micrograms per 100 square centimeters ($\mu g/100cm^2$) of Aroclor 1254, as indicated in Figure 4.62-5. The highest concentration was detected in the sample closest to the hydraulic press.

4.62.7 Data Comparison to Screening Criteria

No PCBs were detected at concentrations that exceeded the 40 CFR 761 (IV) (C) (2) b and c screening criteria for low contact indoor surfaces of 10 $\mu g/100cm^2$.

4.62.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored, as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and no data qualifiers were applied as described in Appendix O.

4.62.9 Recommendations

No further action is recommended for AOC PCB 17 because wipe samples were collected but no analytes exceeded their screening criteria.

Table 4.62-5
AOC PCB 17 PCB Wipe Sampling Results Summary for PCBs
March 1999

Analytical Parameter	No. of Samples	No. of Detections	Concentration ($\mu g/100cm^2$)	State of California Regulatory Levels ($\mu g/100cm^2$)	40 CFR 761 Criteria ($\mu g/100cm^2$)	No. of Detections above Criteria
PCBs						
Aroclor 1254	4	4	3.7, 2.2, 2.3, 1.6	NA	10 [(a)]	0

Notes:

(a) Low contact indoor surfaces per 40 CFR 761 (IV) (C) (2) b and c.

AOC = Area of Concern
CFR = Code of Federal Regulations
cm^2 = Centimeters squared
NA = Not Applicable
PCBs = Polychlorinated Biphenyls
μg = Micrograms

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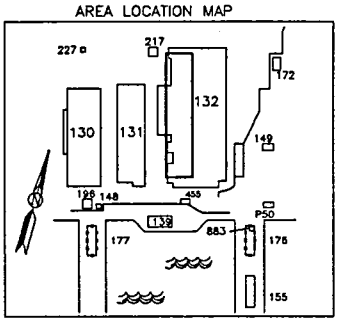
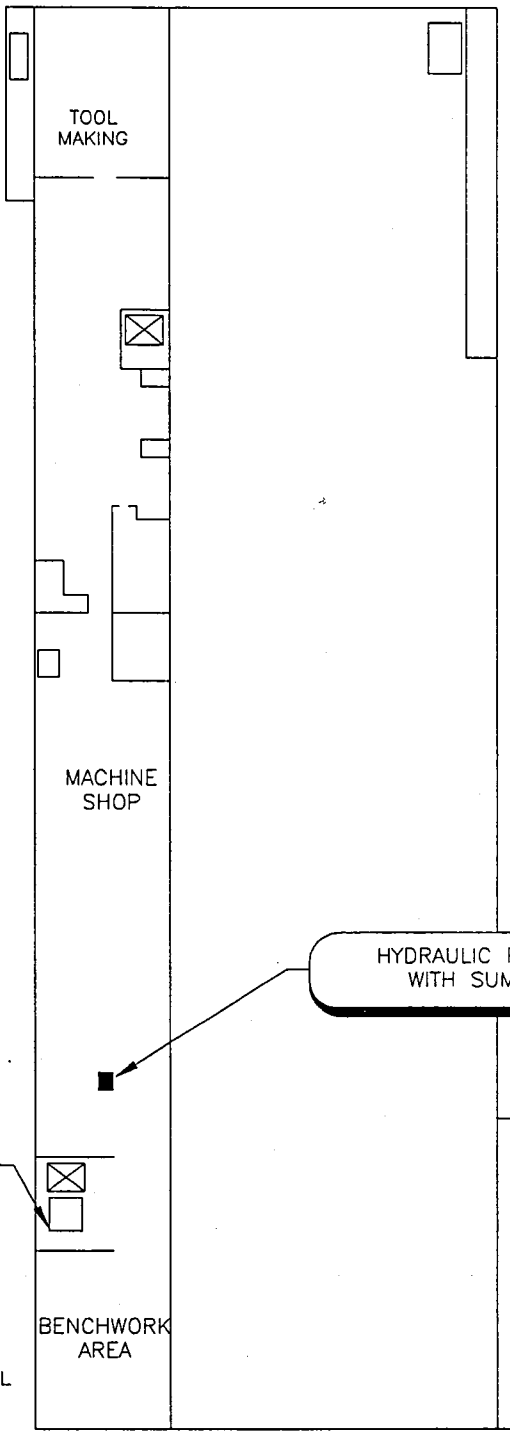
AREA LOCATION MAP





BUILDING 132 FIRST INTERMEDIATE FLOOR (LOCATED ABOVE THE FIRST FLOOR ON THE WEST SIDE OF THE BUILDING)

LEGEND

PCB = POLYCHLORINATED BIPHENYL

LBNSY = LONG BEACH NAVAL SHIPYARD

■ = LOCATION OF HYDRAULIC PRESS, #618444 WITH PCB OILS AS OF 11/27/96 (FROM LBNSY EQUIPMENT INVENTORY)

0 40

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PCB 17 EQUIPMENT NUMBER 618444 SUMP A AND B BUILDING 132	FIGURE 4.62-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.62-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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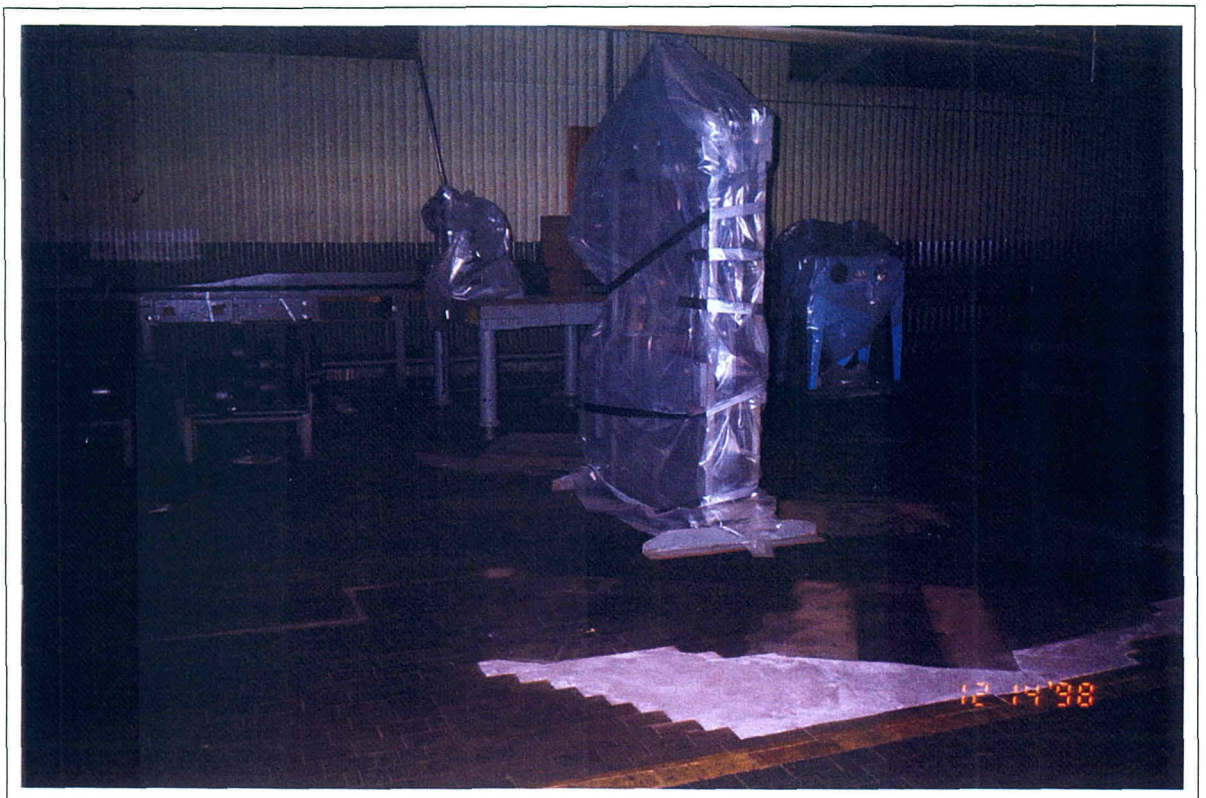
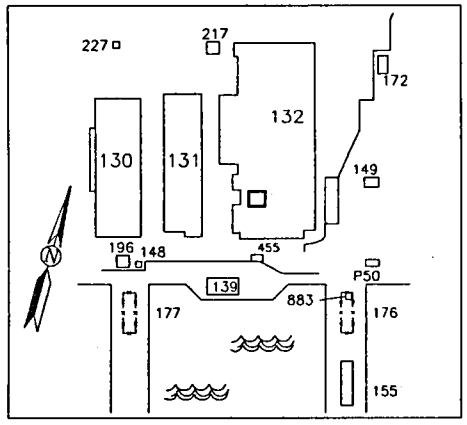


Figure 4.62-2 Hydraulic Press Equipment #618444 (AOC PCB 17) Facing East 12/14/98

AREA LOCATION MAP



BUILDING 132 FIRST INTERMEDIATE FLOOR
(LOCATED ABOVE THE FIRST FLOOR ON THE WEST SIDE OF THE BUILDING)

WOOD BLOCK FLOOR

HYDRAULIC PRESS NUMBER 618444

LEGEND

AOC = AREA OF CONCERN
PCB = POLYCHLORONATED BIPHENYL
(W) = PCB WIPE SAMPLING LOCATIONS

0 1 2 3 4 5
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC PCB 17 EQUIPMENT NUMBER 618444 SUMPS A AND B (BUILDING 132) GROUP B AREAS OF CONCERN	FIGURE 4.62-3
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.62-3		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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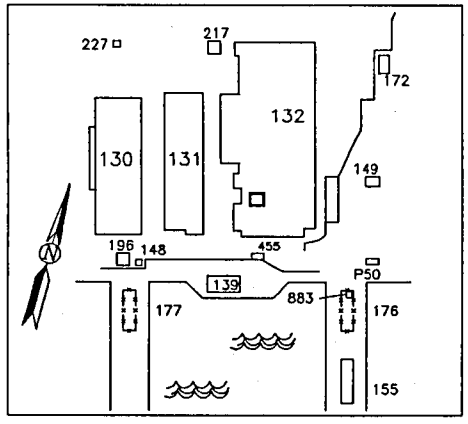
AREA LOCATION MAP



99SY-P17c-P-0	
ANALYTE	CONCENTRATION (µg/100cm²)
AROCLOR 1254	2.3

BUILDING 132 FIRST INTERMEDIATE FLOOR
(LOCATED ABOVE THE FIRST FLOOR ON THE WEST SIDE OF THE BUILDING)

WOOD BLOCK FLOOR

99SY-P17b-P-0	
ANALYTE	CONCENTRATION (µg/100cm²)
AROCLOR 1254	2.2

HYDRAULIC PRESS NUMBER 618444

99SY-P17a-P-0	
ANALYTE	CONCENTRATION (µg/100cm²)
AROCLOR 1254	3.7

99SY-P17d-P-0	
ANALYTE	CONCENTRATION (µg/100cm²)
AROCLOR 1254	1.6

EXPLANATION

99SY-P17a-P-0 = SAMPLE NAME (TYPICAL)
WHERE P = WIPE SAMPLE

LEGEND

AOC = AREA OF CONCERN
PCB = POLYCHLORINATED BIPHENYL
µg/100cm² = MICROGRAMS PER 100 SQUARE CENTIMETERS
(W) = PCB WIPE SAMPLING LOCATIONS

0 1 2 3 4 5
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.62-4
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, MARCH 1999
AOC PCB 17
EQUIPMENT NUMBER 618444 SUMPS A AND B (BUILDING 132)

GROUP B AREAS OF CONCERN

FIGURE
4.62-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.62-4

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4.63 EQUIPMENT #116076C, BUILDING 132 (AOC PCB 18)

A description of Equipment #116076 C (AOC PCB 18), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.63.1 to 4.63.4.

4.63.1 Site Description

Table 4.63-1 summarizes the location and characteristics of AOC PCB 18.

Table 4.63-1
AOC PCB 18 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PCB 18	Building 132, first intermediate floor (in the vicinity of Column P-8)	H-31 or I-31	A gear cutter with oil containing PCBs.	Gear cutter.	Unknown

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyls

Equipment number 116076C was not found during the March 1998 site reconnaissance. LBNSY employee Richard Mazepi, who was responsible for maintaining an inventory of all equipment at LBNSY, could not locate equipment number 116076C in the computerized database of equipment at LBNSY. The LBNSY equipment inventory was compiled in 1996, and any equipment not on the list was most likely removed from LBNSY property prior to 1996 (Mazepi, pers. comm., 1998).

4.63.2 Operational History and Waste Characteristics

Table 4.63-2 summarizes the operational history and waste characteristics.

Table 4.63-2
AOC PCB 18 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PCB 18	Unknown	Gear cutting.	Potential for PCB-contaminated oil to spill on floor areas surrounding the equipment.	Unknown.

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyls

Sampling results from the 1993 PCB investigation for LBNSY equipment indicated that the PCB concentration for oil in equipment number 116076C (a gear cutter) was 19.74 ppm (LBNSY-ED 1996a). In accordance with 40 CFR Part 761, oil containing less than 50 ppm PCBs is not considered PCB-contaminated.

4.63.3 Preliminary Assessment Resources

Table 4.63-5 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.63-3
AOC PCB 18 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Environmental Baseline Survey	1996	LBNSY-ED	Provided 1993 PCB investigation results for LBNSY equipment.
List of Machines with PCBs	1997	LBNSY-ED	Listed 1996 sample PCB concentration of 19.74 ppm.
Personal communication	1998	Mazepi, LBNSY	Provided information regarding the LBNSY equipment inventory.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
PCB = Polychlorinated Biphenyl
ppm = parts per million

4.63.4 PA Recommendations

Based upon PA findings, no further action is recommended for AOC PCB 18 because the oil PCB concentration was less than 50 ppm and thus is not considered PCB-contaminated equipment per 40 CFR 761. In addition, the equipment could not be located on LBNSY property, it was likely removed prior to 1996, and its exact former location is not known.

4.64 BUILDING 130, PCB SAPs (AOC PCB 20)

A description of the PCB SAPs (AOC PCB 20), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.64.1 to 4.64.4.

4.64.1 Site Description

Table 4.64-1 summarizes the location and characteristics of AOC PCB 20. A site map is provided as Figure 4.64-1. Because AOC PCB 20 and AOC PCB 16 (Section 4.61) were at the same location, refer to Figures 4.61-2 and 4.61-3 for site photographs.

Table 4.64-1
AOC PCB 20 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PCB 20	Building 130 (North compound)	H-29	Two SAPs: (1) PCB gaskets, nuts and bolts. (2) PCB coveralls.	Metal drum for each SAP.	55-gallon container.

AOC = Area of Concern
No. = Number
PCB = Polychlorinated Biphenyls
SAP = Satellite Accumulation Point

AOC PCB 20 includes two SAPs at Building 130 where used PCB-contaminated gaskets, nuts, and bolts (SAP Number 130-17-1) and coveralls (SAP Number 130-17-2) were stored. Coveralls are defined as any item of work clothing worn by shop personnel that may have been contaminated by PCBs during work activities. The SAPs were located within a chain-link-fenced area north of Building 130. During the January 1998 site reconnaissance, the SAPs no longer existed at the site and no ground surface staining was observed. The east and west sides of the fenced area were observed to be covered with canopies and the ground surface was asphalt.

4.64.2 Operational History and Waste Characteristics

Table 4.64-2 summarizes the operational history and waste characteristics.

Table 4.64-2
AOC PCB 20 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PCB 20	1993 to 1996	Cleaning PCB-contaminated ventilation systems from ships and LBNSY buildings.	PCB-contaminated gaskets, nuts, bolts, and coveralls.	Gaskets: approximate annual quantity 310 pounds. Coveralls: approximate annual quantity 600 pounds.

AOC = Area of Concern No. = Number PCB = Polychlorinated Biphenyl

Initiated installation of SAPs 130-17-1 and 130-17-2 in November 1993 (LBNSY-ED 1993). The annual amount of PCB-contaminated gaskets to be stored at SAP 130-17-1 was estimated at 310 pounds. The annual amount of PCB-contaminated coveralls to be stored at SAP 130-17-2 was estimated at 6000 pounds. The quantities of oil and PCBs absorbed in the felt gaskets and remaining on the coveralls were likely relatively low.

4.64.3 Preliminary Assessment Resources

Table 4.64-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.64-3
AOC PCB 20 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
SAP Files	1993	LBNSY-ED	Initiation date of PCBs SAP including estimated quantities generated.
SAP database	1996	LBNSY-ED	SAP information, including waste quantity and type.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
PCB = Polychlorinated Biphenyl
SAP = Satellite Accumulation Point

4.64.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PCB 20 because of the operations involving PCB-contaminated materials. Therefore, PCB wipe sampling was recommended, as described in the Work Plan (CDM Federal 1998a).

4.64.5 Numbers of Samples and Analyses

Based on comments from regulatory agencies during a site walk on 15 April 1998, only one wipe sample was required to characterize both AOC PCB 20 and PCB 16 (CDM Federal

1998a). This sample was collected in the fenced compound northwest of Building 130, as shown in Figure 4.61-4.

4.64.6 Analytical Results

As shown in Table 4.61-5, the PCB wipe sample result indicated no detection of PCBs.

4.64.7 Data Comparison to Screening Criteria

Because no PCBs were detected, no criteria were exceeded.

4.64.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for the sample as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to the sample as described in Appendix O.

4.64.9 Recommendations

No further action is recommended for AOC PCB 20 because no PCBs were detected and no criteria were exceeded.

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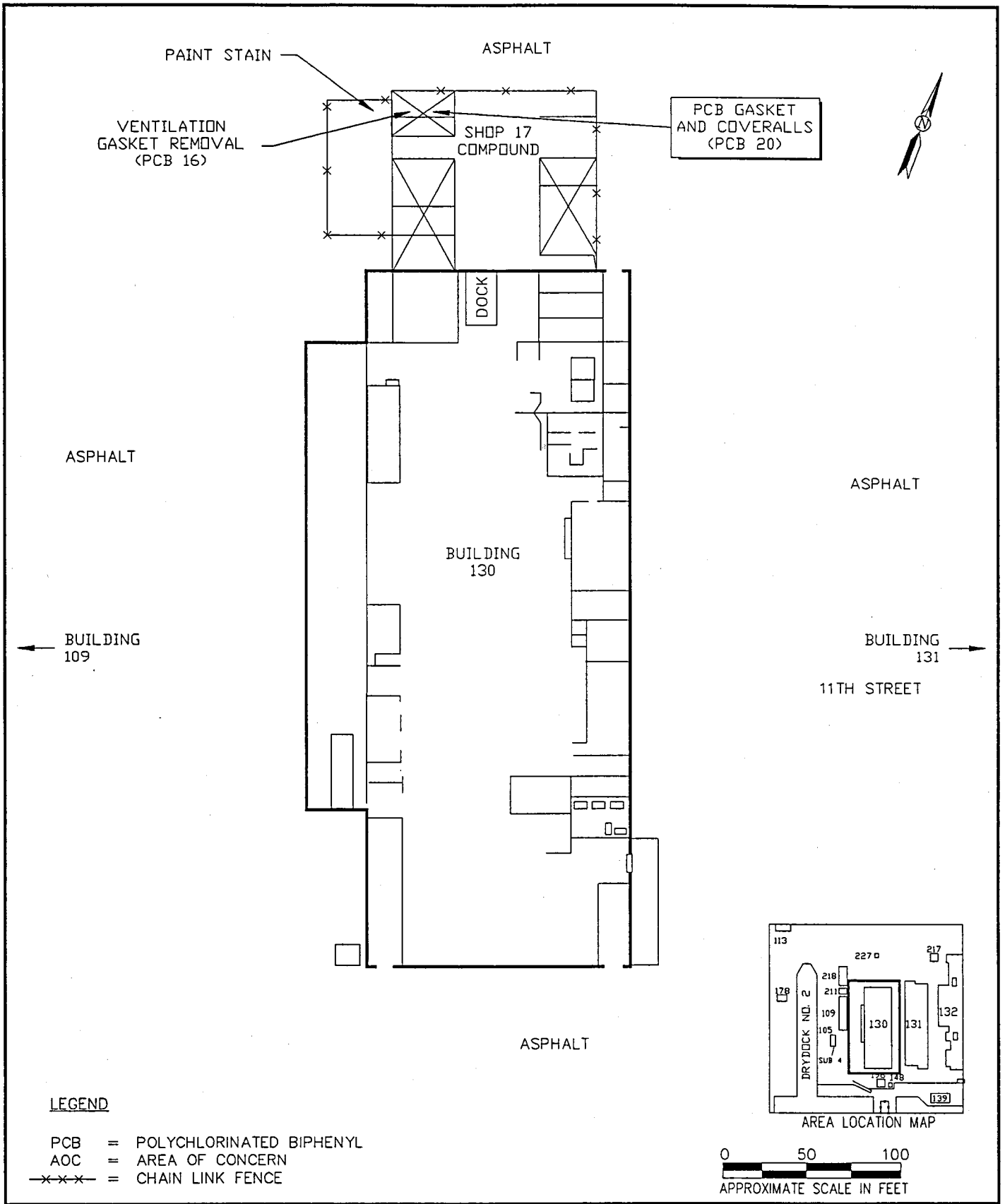

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99
FN: 4.64-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC PCB 20
SATELLITE ACCUMULATION POINTS FOR PCB GASKETS AND COVERALLS BUILDING 130
GROUP B AREAS OF CONCERN

FIGURE
4.64-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.65 PLATING SHOP, BUILDING 210 (AOC PT 1)

This section presents a description of the Building 210 Plating Shop (AOC PT 1), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.65.1 Site Description

AOC PT 1 is located in the northeastern corner of Building 210 (see Figure 4.65-1). It consisted of 63 tanks ranging in size from 55 to 5,400 gallons. At the time of the January and March 1998 site reconnaissances, these tanks were still in place, but had been drained and cleaned and were not being used. These tanks were located in three sunken, concrete-walled drainage areas, as indicated in Figure 4.65-2. The three areas were covered by grates and separated by concrete walkways and were categorized as "chromate", "cyanide", and "miscellaneous" plating areas (CDM 1978). These three areas are designated as area number 1, 2, and 3 respectively in Table 4.65-2 and Figure 4.65-2. The bottom of Tank Number 42, used for hard chrome plating, was approximately 10 feet beneath the bottom of the sunken concrete drainage area floor of the plating shop; the bottom of Tank Number 4, used for cleaning solutions, was one foot beneath the sunken floor (LBNSY-PW 1989). The bottom of the remainder of the tanks was above the concrete floor.

Five aboveground storage tanks (ASTs) were located outside Building 210, along with six scrubbers to clean air drawn through ducts located beneath the floor of the plating shop. Hoods were located at most of the process tanks inside Building 210.

Table 4.65-1 summarizes the location and characteristics of AOC PT 1. Photographs of the site are shown in Figures 4.65-3 to 4.65-10.

Table 4.65-1
AOC PT 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 1	Inside northeastern corner of Building 210.	C-26	Metal plating shop.	Room containing 63 tanks. Two concrete floor walkways separating 3 sunken, concrete-walled areas where tanks are located. Tanks constructed of fiberglass (22), mild steel (19), stainless steel (8), polypropylene (2), steel (1), concrete (1), and unknown (10).	80-foot by 125-foot room. Aboveground tanks ranging in size from 55 to 5,400 gallons. Typical tank size was 1,300 gallons (9 feet x 3.5 feet x 6 feet)

AOC = Area of Concern No. = Number PT = Process Tank

Table 4.65-2
AOC PT 1 Tank Contents and Use

Tank No.	Area No.[b]	Tank Use	Tank Contents	Tank Size (gallons)
1	3	Cadmium Plating	Cadmium Cyanide (Covered)	1300
2	3	Overflow Rinse	Water Rinse (Covered)	1300
3	3	Hydrochloric Acid	Hydrochloric Acid, Muriatic Acid	1300
4	3	Caustic Cleaner	Clean Caustic Soda, Sodium Hydroxide	5400
5	3	Water Rinse; Sulfuric Acid strip previously	Rinse Water; Sulfuric Acid previously	1300
6	3	Hydrochloric Acid	Muriatic Acid, Hydrochloric Acid	1300
7	3	Overflow Rinse	Water Rinse	1300
8[a]	3	Alkaline Cleaner	Alkaline Cleaner	1300
A	3	Cadmium Conversion	Cadmium Chromate, Chromic Acid, Nitric Acid, Sulfuric Acid	900
AA	3	Chromate Rinse	Rinse Water (Chromate)	1300
9	3	Nickel Strike; Zinc Phosphate previously	Nickel Chloride; Zinc Phosphate	1300
10	3	Overflow Rinse	Water Rinse (Covered)	1300
11	3	Cadmium Plating	Muriatic Acid, Hydrochloric Acid, Chrome/Water Solution	1300
11A	3	Stagnant Rinse	Cadmium Rinse, Sodium Cyanide, Sodium Hydroxide	55
12	3	Overflow Rinse	Water Rinse (Covered)	1300
13	3	Degreaser	Simple Green	1300
14	3	Empty; Nitric Bright Dip Previously	Epoxy Paint Stripper; Nitric previously	1300
15	3	Rinse	Water Rinse (Covered)	1300
16	3	Copper Brite Dip; Chrome Dip previously	Phosphoric Acid, Acetic Acid, Nitric Acid, chrome acid previously	1300
17	3	Overflow Rinse	Rinse Water	1300
18	3	Rust Preventive; Manganese Phosphate	Rust Inhibitor (Steel Tank, White Crystal Buildup)	1300
19	3	Rust Preventive	Phosphoric Acid, Industrial Layup	1300
20[a]	2	Nickel Strike	Nickel Chloride	1300
21	2	Silver Plating	silver plating solution, potassium cyanide, silver cyanide	1300
21A	2	Static Rinse water	silver cyanide, potassium cyanide	900
22	2	Silver Plating	silver strike solution, potassium cyanide	1300

Table 4.65-2 (continued)
AOC PT 1 Tank Contents and Use

Tank No.	Area No.[b]	Tank Use	Tank Contents	Tank Size (gallons)
23	2	Electro Cleaner	caustic soda	1300
23A	2	Water Rinse	sodium hydroxide	900
24	2	Degreaser, Rinse previously	Simple Green; water previously	175
24A	2	Gold Plating	Sulfuric Acid, Copper Cyanide	Unknown
25	2	Soak Cleaner	Aluminum Etchant, Sodium Hydroxide	900
26	2	Aluminum Etch	Aluminum Etchant, Sodium Hydroxide	900
27	2	Overflow Rinse	Rinse Water	1300
28A	2	Micro Brite Etch	Etchromate Chromate	700
28B	2	Copper Brite	Copper Sulfate, Bright Copper Solution	700
29	2	Copper Plating	Copper Cyanide, Potassium Cyanide, Potassium Hydroxide	1300
29A	2	Copper Stagnant Rinse	Copper Cyanide, Potassium Cyanide, Potassium Hydroxide	Unknown
30	2	Stringent Rinse	Water Rinse	1300
31	2	Overflow Rinse, Rinse Water, Sour Water	Muriatic Acid, Hydrochloric Acid and Water	1300
32	2	Sour Water Rinse and Fresh Water Rinse	Hydrochloric Acid, Muriatic Acid, and Water	900
33	2	Nickel Plating	Sulfuric Acid, Chromic Acid, Nickel Chloride Solution	1300
34[a]	2	Rinse	Water	1300
35	2	Desmutter	Desmutter Chromate, Sulfuric Acid, Nitric Acid	900
36	2	Copper Bright Dip Aurous #19; Rinse previously	Hexavalent Chromium; water previously	900
37	2	Hot Water Rinse	Water	1300
38[a]	2	Electrolysis Nickel Hold	Nickel	Unknown
None	2	Zincate	Zincate	Unknown
None	2	Nitric Acid	Nitric Acid	Unknown
None	2	Sulfuric Acid	Sulfuric Acid	Unknown
39	1	Rinse Tank	Spray Rinse, Chromic Acid	1300
40	1	Water Rinse	Water Rinse	1300
41	1	Hard Chrome Plating	Hard Chrome, Chromic Acid	2500

Table 4.65-2 (continued)
AOC PT 1 Tank Contents and Use

Tank No.	Area No.[b]	Tank Use	Tank Contents	Tank Size (gallons)
42	1	Hard Chrome Plating	Hard Chrome, Chromic Acid	3650
43	1	Hard Chrome Plating	Hard Chrome, Chromic Acid	1300
44	1	Hard Chrome Plating	Hard Chrome, Chromic Acid	1300
45	1	Conversion Coat, Empty	Aluminum Conversion Coat, Chromic Acid, Silica Fluoride	700
46	1	Overflow Rinse	Rinse Water	900
47	1	Desmutter	Desmutter Chromate, Sulfuric Acid, Nitric Acid	700
48	1	Aluminum Etch; alkaline cleaner previously	Cleaner, Aluminum Etchant, Sodium Hydroxide	700
49	1	Overflow Rinse	Fresh Water Rinse	1300
50	1	Aluminum Etch	Aluminum Etch, Caustic Acid, Sodium Hydroxide	700
51	1	Water Rinse	Water Rinse	1300
52	1	Paint Strip	Ethylene Glycol, Monoethanolamine, N-methylpyrrolidone	1800

Notes:

Source: *Plating Shop Study for Building 210* (Southwestern Division Naval Facilities Engineering Command, April 1992), Previous use from Long Beach Naval Shipyard Public Works Drawing 1,307,444 (1969).

(a) Listed in 1969 equipment plans Drawing 1,304,444, but did not exist in 1990s.
(b) See Figure 4.65-2.

AOC = Area of Concern
No. = Number
PT = Process Tank

4.65.2 Operational History and Waste Characteristics

Plating operations were transferred from Building 129 to the newly constructed Building 210 in 1974 at the same time that other electrical shop activities were moved to Building 210. AOC PT 1 operations in the northeastern corner of Building 210 were conducted from 1974 through 1996 or 1997. The plating shop was used for hard chrome, nickel, cadmium cyanide, silver cyanide, copper cyanide, and gold plating operations. The plating and associated cleaning operations were the largest generator of hazardous waste within Building 210. As of 1990, the plating shop generated approximately 30,000 gallons per year of liquid hazardous waste from plating operations. Table 4.65-3 indicates the types of waste generated and the approximate annual quantities of each (NEESA 1990). Prior to use of the IWTP in 1990, all liquid waste generated from plating operations was discharged to the sanitary sewer. After completion of the IWTP in 1990, the rinsewater from plating operations was diverted to the IWTP for treatment. Caustic, cyanide solution, and cadmium, silver, and chromium plating solution tanks were designed as zero-discharge rinsewater recycling systems whereby rinse water was returned to the process tank to make up of for evaporation loss. Paint stripper rinsate and caustic cleaner wastes were sent offsite for disposal (NFESC 1995).

In 1976, Naval Command Western Division sent a letter to LBNSY instructing public works to replace the lining at Tank 29 (Copper Plating) to correct "faulty original construction." It is unknown whether any leaks occurred because of this problem.

Spills likely occurred during the Building 210 Plating Shop operations, but only two spills in Building 210 were recorded on the spill logs maintained from 1989 to 1996. In April 1989, there was a spill of 450 gallons of hydrochloric acid, while in May 1993, 25 gallons of an alkaline solution was spilled (LBNSY-ED 1996). LBNSY personnel recalled that the plating shop had fumes and that personnel working in the area were occasionally sick from the fumes (Johnson, pers. comm. 1998).

North of Building 210, approximately 200 gallons of TCE was disposed directly to the ground between 1974 and 1980 (BNI 1997a). This site was investigated as IR Site 8 and was recommended for no further action (BNI 1997a); regulatory approval is pending.

Outside the plating shop on the eastern side of Building 210, four ASTs that stored acids or bases are located. Each AST can hold 2,600 gallons, one for sodium hydroxide, one for hydrochloric acid, and two for other acids. The contents of these ASTs were pumped to the process tanks inside Building 210 as needed. A 1,200-gallon TCE AST was also located outside at one time. Drums containing acids, bases, and TCE were also stored outside at some time (A.L. Burke date unknown).

Table 4.65-3 summarizes the operational history and waste characteristics of AOC PT 1.

Table 4.65-3
AOC PT 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Approximate Annual Quantity (gallons)
PT 1	1974 to 1997	Degreasing, metal plating, rinsing.	Sodium hydroxide solution. Trichloroethylene. Hydrochloric acid solution. Chromium acid solution. Dilute caustic. Aluminum etchant. Methylene chloride. Nitric acid.	12,000 330 5,000 8,600 350 2,100 1,400 30

Notes:

Source: *Comprehensive Hazardous Waste Minimization Survey, Long Beach Naval Shipyard* (NEESA 1990).

AOC = Area of Concern No. = Number PT = Process Tank

4.65.3 Preliminary Assessment Resources

Table 4.65-4 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.65-4
AOC PT 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Title Unknown	Unknown	A.L. Burke Engineers, Inc.	Map showing plating shop tank locations and contents.
Drawing Number 1,304,444	1969	LBNSY-PW	Pit details plan, facility layout, and tank specifications.
WESTDIV Letter to LBNSY	1976	WESTDIV	Instructed LBNSY personnel to replace lining at Tank 29 in Plating Shop.
Environmental Engineering Survey	1977	CDM Inc.	Discusses industrial waste source and method of disposal for Building 210 Plating Shop.
Initial Assessment Study	1983	NEESA	Discusses the operations of the electrical shops including plating operations at Building 210 (Section 5.4.5).
Comprehensive Hazardous Waste Minimization Study	1990	NEESA	Contains historical information on hazardous waste generating processes and identifies potential waste minimization techniques.
Plating Shop Study	1992	SWDIV	Study of the plating shop in Building 210 to discuss safety, environmental issues, efficiency, and cost of plating operations.
Industrial Process Assessment Report	1995	NFESC	Summarizes the processes and wastes generated from various industrial operations.
Environmental Baseline Survey	1996	LBNSY-ED	Provides information on hazardous materials storage areas and spill histories at LBNSY.
RI for IR Sites 8 through 13	1997	BNI	Discusses TCE spill north of Building 210 and IR Site 8.
Personnel Interview	1998	Johnson and Nunn, LBNSY	Information about the Plating Shop and the affect fumes had on workers in the area.

AOC = Area of Concern
CDM = Camp, Dresser, & McKee
BNI = Bechtel National Incorporated
IR = Installation Restoration
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Department
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity
NFESC = Naval Facilities Engineering Service Center
No. = Number
PT = Process Tank
RI = Remedial Investigation
SWDIV = Southwest Division, Naval Facilities Engineering Command
TCE = Trichloroethylene
WESTDIV = Western Division, Naval Facilities Engineering Command

4.65.4 PA Recommendations

Based on PA findings, further action was recommended for AOC PT 1. The PA records search identified hazardous materials and waste used and disposed in large quantities. The large volume and toxicity of plating solutions used at this Plating Shop and the likelihood of spills or leaks over the years suggested that soil and groundwater in this area could possibly be impacted. The Work Plan recommended soil and groundwater sampling to assess whether wastes may have impacted the soil and/or groundwater beneath the plating shop (CDM Federal 1998a).

4.65.5 Number of Samples and Analyses

One liquid, ten soil, and ten groundwater samples were proposed in the Work Plan (CDM Federal 1998a) for collection and analysis at the Building 210 plating shop. Because of the large number of tanks and close proximity of the tanks to each other, the regulatory agencies recognized during a 15 April 1998 site walk that access problems might limit the number of samples that the drilling rig could gain access to inside the plating shop. Therefore, the regulatory agencies recommended that five of the ten proposed soil and groundwater sampling locations be located immediately outside the plating shop.

In June 1998, soil and groundwater samples were collected at five locations outside the plating shop and two locations inside the plating shop (see Figures 4.65-6 through 4.65-11). Three of the five locations originally planned for sampling inside the plating shop were inaccessible and were not sampled. A hole was cored through the concrete floor and sampling was attempted at these three locations, but a second layer of concrete located approximately 4 feet beneath the first layer prevented access to the soil and groundwater below. This second layer of concrete was likely the bottom of the ventilation duct system. The liquid sample was collected from Sump No. 2 located in the north central part of the shop (see Figure 4.65-10) to characterize the discolored liquid that existed in the bottom of the sump.

Samples were analyzed for the analytical categories of concern as shown in Table 4.65-5. One sample was recommended by the U.S. EPA for analysis for pentachlorophenol to verify that these tanks were not used for wood preserving in the past. All soil samples were collected at a depth of one foot below the bottom of the sunken concrete floor (i.e., one foot below the bottom of the tanks). Groundwater samples were collected at depths varying between 7 and 12 feet bgs, depending on the depth at which groundwater was first encountered.

Table 4.65-5
AOC PT 1 Number of Samples and Analyses

Sample Matrix	VOCs	SVOCs[a]	Metals	Cr^{+6}	CN	pH
Soil	7	1	7	7	7	7
Groundwater	7	1	7[b]	7	7	7
Liquid	1	1	1[b]	1	1	1

Notes:

(a) One groundwater and soil sample were analyzed for SVOCs to verify that pentachlorophenol was not used at this site for wood treatment.

(b) Dissolved metals.

AOC = Area of Concern
CN = Cyanide
Cr^{+6} = Hexavalent Chromium
PT = Process Tank
VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds

4.65.6 Analytical Results

Soil, groundwater, and liquid analytical results are summarized below, as well as in Tables 4.65-6 to 4.65-8 and Figure 4.65-12.

4.65.6.1 Soil

In the soil samples, VOCs, SVOCs, cyanide, hexavalent chromium, and 7 of the 17 metals were not detected, as shown in Tables 4.65-6 and 4.65-8. Ten of 17 metals were detected in at least one soil sample as shown in Table 4.65-8. Results for pH ranged from 7.63 to 8.40.

4.65.6.2 Groundwater

In the groundwater samples, two VOCs (cis-1,2-dichloroethene and 1,1,1-trichloroethane) and 8 of 17 metals were detected as shown in Table 4.65-6 and 4.65-8. Cyanide, SVOCs, the remaining VOCs, and 9 of 17 metals were not detected. The pH for all seven groundwater samples ranged from 7.03 to 7.27.

4.65.6.3 Liquid

For the liquid sample, four chlorinated VOCs were detected: 1,1,1- trichloroethane at a concentration of 14J mg/L, carbon tetrachloride at a concentration of 3.45J mg/L, 1,1-DCA at a concentration of 1.7J mg/L, and 1,1-DCE at a concentration of 0.12J. The SVOC BEHP, as well as cyanide, was also detected in the liquid sample. Thirteen of 17 metals analyzed were detected in the liquid sample.

4.65.7 Data Comparison to Screening Criteria

For soil samples, no analyte results exceeded their respective industrial PRGs for organic compounds (Table 4.65-6) and no metals exceeded both their respective industrial PRGs and background levels (Table 4.65-8).

For groundwater samples, no analyte results exceeded their respective screening criteria for organic compounds (Table 4.65-6) and for metals, no analytes exceeded their respective screening criteria and background levels (Table 4.65-8).

The liquid sample was collected to characterize the liquid for disposal characterization purposes. For the liquid sample, carbon tetrachloride was detected at a level above its screening criteria (Table 4.65-7), but no metals exceeded the criteria for hazardous waste (Table 4.65-8).

4.65.8 Data Validation and Usability

Field QC samples were collected as previously discussed in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. No data were rejected and data qualifiers were applied to the sample as described in Appendix O.

Less samples were collected than planned because, during sampling activities, a second concrete floor was discovered beneath the main sunken concrete floor. All five sampling locations outside Building 210 and two of the five planned sampling locations inside the plating shop were accessible and sampled. In a 15 April 1998 site walk, the regulatory agencies had recognized the difficulty in accessing sampling locations inside the plating shop, primarily because of the large number of tanks and the limited space between these tanks. During that site walk, the regulatory agencies recommended collecting five soil and five groundwater samples outside the northeastern corner of Building 210 in case samples could not be collected inside the plating shop; therefore, the more than the minimum acceptable number of samples was collected for this AOC.

4.65.9 Recommendations

Further action is recommended for the liquid waste at the Building 210 plating shop. This liquid, located in a floor sump at the northern end of the plating shop, is considered hazardous because of its concentration of the chlorinated solvent carbon tetrachloride. The liquid should be pumped out and disposed of as hazardous waste. This liquid waste is situated below the concrete floor of the Plating Shop but above the concrete floor of the ventilation duct system. The volume of liquid is unknown because it extends laterally beneath the floor. Because it is possible that the concrete floor might have absorbed contaminants, any future deconstruction activities that involve removal of the concrete floor should take this into consideration.

No further action is recommended for soil and groundwater beneath the plating shop because no analyte results exceeded their respective screening criteria.

Table 4.65-6
AOC PT 1 Laboratory Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above PRGs**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria[b] (mg/L)**	**No. of Detections above Screening Criteria**
VOCs (60 analytes)[c]										
cis-1,2-Dichloroethene	7	0	ND	150	0	7	2	0.002J, 0.001J	0.006 [d]	0
1,1,1-Trichloroethane	7	0	ND	1,400	0	7	1	0.001J	540	0
SVOCs (64 analytes)[c]	7	0	ND	N/A	0	7	0	ND	0.0009	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for sources of criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) No Ocean Plan criteria exist. Value presented is from Basin Plan and is for informational purposes only.

AOC = Area of Concern
J = Estimated concentration
Mg/kg = Milligrams Per Kilogram
Mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
SVOCs = Semivolatile Organic Compounds
VOCs = Volatile Organic Compounds

Table 4.65-7
AOC PT 1 Laboratory Sampling Results Summary for Organic Compounds (Liquid)
June 1998

LIQUID (98SY-T01k-W-5)						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**State of California Regulatory Levels[a] (mg/L)**	**U.S. EPA RCRA Criteria[a] (mg/L)**	**No. of Detections Above Screening Criteria**
VOCs (60 analytes) [b]						
1,1,1-Trichloroethane	1	1	14J	NA	NA	0
Carbon Tetrachloride	1	1	**3.45J**	NA	0.5	1
1,1-Dichloroethane	1	1	1.7J	NA	NA	0
1,1-Dichloroethene	1	1	0.12J	NA	0.7	0
SVOCs (64 analytes) [b]						
Bis (2-ethylhexyl) phthalate	1	1	0.011J	NA	NA	0

Notes:

(a) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.
(b) If not listed in this table, the remaining analytes were not detected.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated concentration
mg/L = milligrams per liter
NA = Not Available
No. = Number
PT = Process Tank
RCRA = Resource Conservation and Recovery Act
SVOCs = Semivolatile Organic Compounds
US EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.65-8
AOC PT 1 Sampling Results for Inorganic Compounds
June 1998

	SOIL						GROUNDWATER					
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above PRGs	No. of Samples	No. of Detections	Concentration (mg/L)	Screening Criteria for water[c] (mg/L)	Background Level[b] (mg/L)	No. of Detections above Screening Criteria
Antimony	7	0	ND	750	11.3	0	7	0	ND	1.2	0.0616	0
Arsenic	7	7	2.3, 2.0, 2.3, 2.2, 2.2, 2.1, 2.2	3.0	17.5	0	7	1	0.0038J	0.008	0.0276	0
Barium	7	7	30.3, 32.2, 22.9, 27.4, 23.3, 20.3J. 31.9	100,000	275	0	7	7	0.0802J, 0.0942J, 0.0854J, 0.108J, 0.0686J, 0.034, 0.0543	1[d]	0.1777	0
Beryllium	7	0	ND	3,400	1.4	0	7	0	ND	$3.3x10^{-3}$	0.0020	0
Cadmium	7	0	ND	930	1.7	0	7	0	ND	0.001	0.0017	0
Chromium	7	7	19.2, 10.8, 8.5, 10.1, 9.9, 12.9, 10.2	450	60.9	0	7	0	ND	190	0.0029	0
Cobalt	7	7	2.6, 2.5, 3.3, 3.6, 3.2, 3.2, 3.4	29,000	24.5	0	7	0	ND	2.2[d]	0.0071	0
Copper	7	7	3.6, 3.4, 4.2, 4.6, 4.9, 5.3, 4.4	70,000	798.7	0	7	0	ND	0.003	0.1072	0
Lead	7	7	2.6, 2.4, 2.6, 2.2, 3.6, 4.1, 3.4	1,000	185.2	0	7	1	0.0016J	0.002	0.028	0
Mercury	7	4	0.11J, 0.025J, 0.063J, 0.16J	560	2.5	0	7	1	0.00015J	$4.0x10^{-3}$	0.0009	0
Molybdenum	7	0	ND	9,400	N/A	0	7	5	0.0115, 0.0089, 0.0091J, 0.0104, 0.0058J,	0.18[d]	NA	0
Nickel	7	7	10.1, 6.3, 5.6, 6.5, 6.3, 7.5, 6.4	37,000	32.6	0	7	2	0.0109, 0.0387J	0.005	0.0958	0
Selenium	7	0	ND	9,400	1.4	0	7	1	0.0029J	0.015	0.040	0
Silver	7	0	ND	9,400	1.5	0	7	0	ND	0.0007	0.0072	0
Thallium	7	0	ND	150	4.2	0	7	0	ND	0.014	0.0075	0
Vanadium	7	7	11.9, 11.2, 14.8, 16.0, 14.9, 16.8, 16.1	13,000	84.9	0	7	0	ND	0.26[d]	0.0107	0
Zinc	7	7	14.6, 15.0, 18.8, 19.1, 20.1J, 22.3J, 19.8	100,000	844.9	0	7	1	0.0185J	0.020	0.291	0
Cr^{+6}	7	0	ND	64	NA	0	7	0	ND	0.002	NA	0
Cyanide	7	0	ND	35	NA	0	7	0	ND	0.01	NA	0
pH	7	7	7.63 to 8.40 (pH Units)	NA	NA	0	7	7	7.03 to 7.27	6.0 to 9.0 (pH units)	NA	0

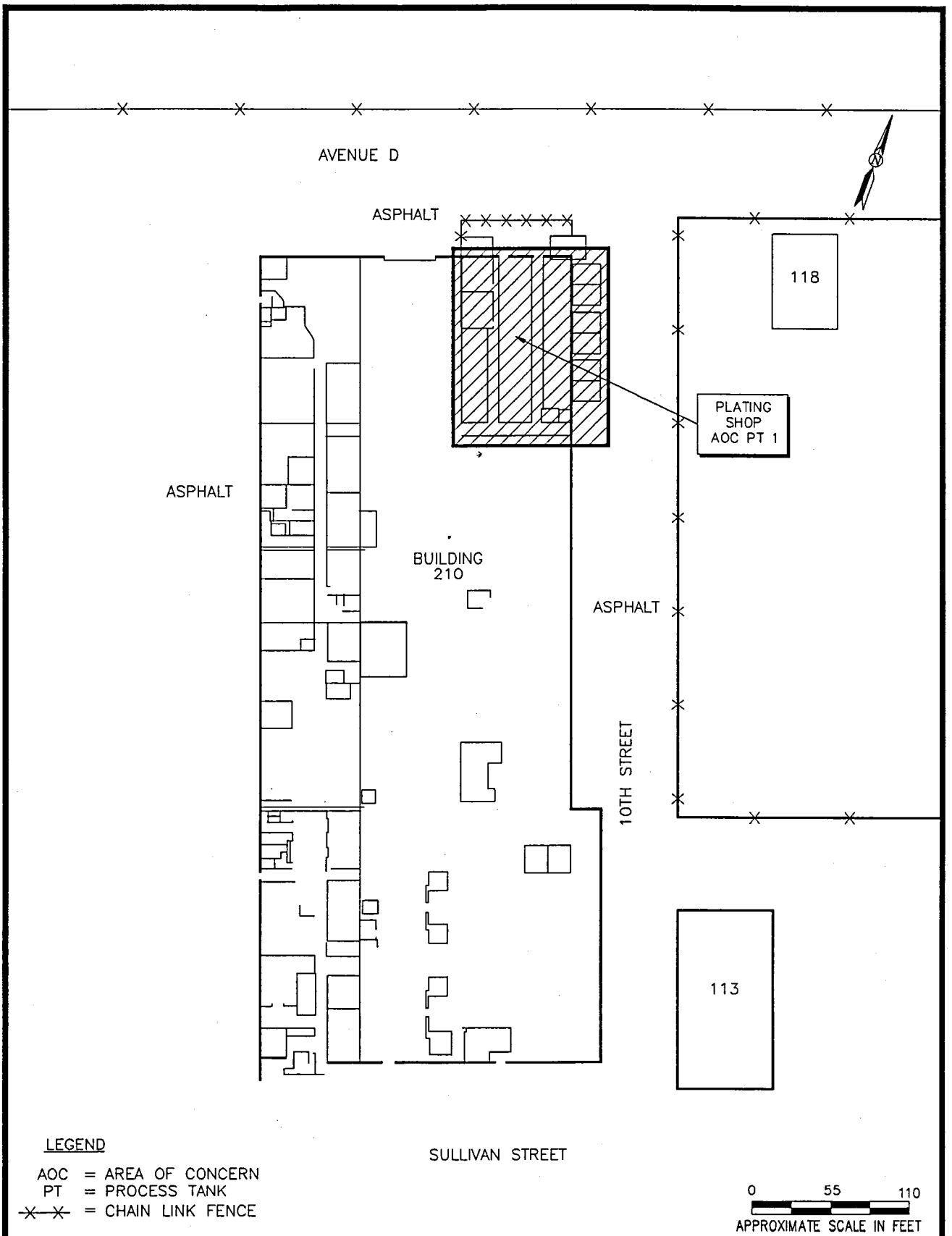
Table 4.65-8 (continued)
AOC PT 1 Sampling Results for Inorganic Compounds
June 1998

LIQUID						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**State of California Regulatory Levels[c] (mg/L)**	**U.S. EPA RCRA Criteria[c] (mg/L)**	**No. of Detections above Screening Criteria**
Antimony	1	1	0.558	15	NA	0
Arsenic	1	1	0.0184	5	5	0
Barium	1	1	0.0559	100	100	0
Beryllium	1	0	ND	0.75	NA	0
Cadmium	1	1	0.129	1	1	0
Chromium	1	1	0.0484	5	5	0
Cobalt	1	1	0.0295	80	NA	0
Copper	1	1	3.1	25	NA	0
Lead	1	0	ND	5	5	0
Mercury	1	1	0.002	0.2	0.2	0
Molybdenum	1	1	0.310	350	NA	0
Nickel	1	1	7.760	20	NA	0
Selenium	1	1	0.0355	1	1	0
Silver	1	1	0.050	5	5	0
Thallium	1	0	ND	7	NA	0
Vanadium	1	0	ND	24	NA	0
Zinc	1	1	0.103	250	NA	0
Cr^{+6}	1	0	ND	5	NA	0
Cyanide	1	1	0.90J	NA	NA	0
pH	1	1	7.97 (pH Units)	2.0 to 12.5 (pH Units)	2.0 to 12.5 (pH Units)	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
mg/kg = Milligrams per kilogram
mg/L = Milligrams per liter
RCRA = Resource Conservation and Recovery Act
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC PT 1 PLATING SHOP BUILDING 210 GROUP B AREAS OF CONCERN	FIGURE 4.65-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.65-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157		

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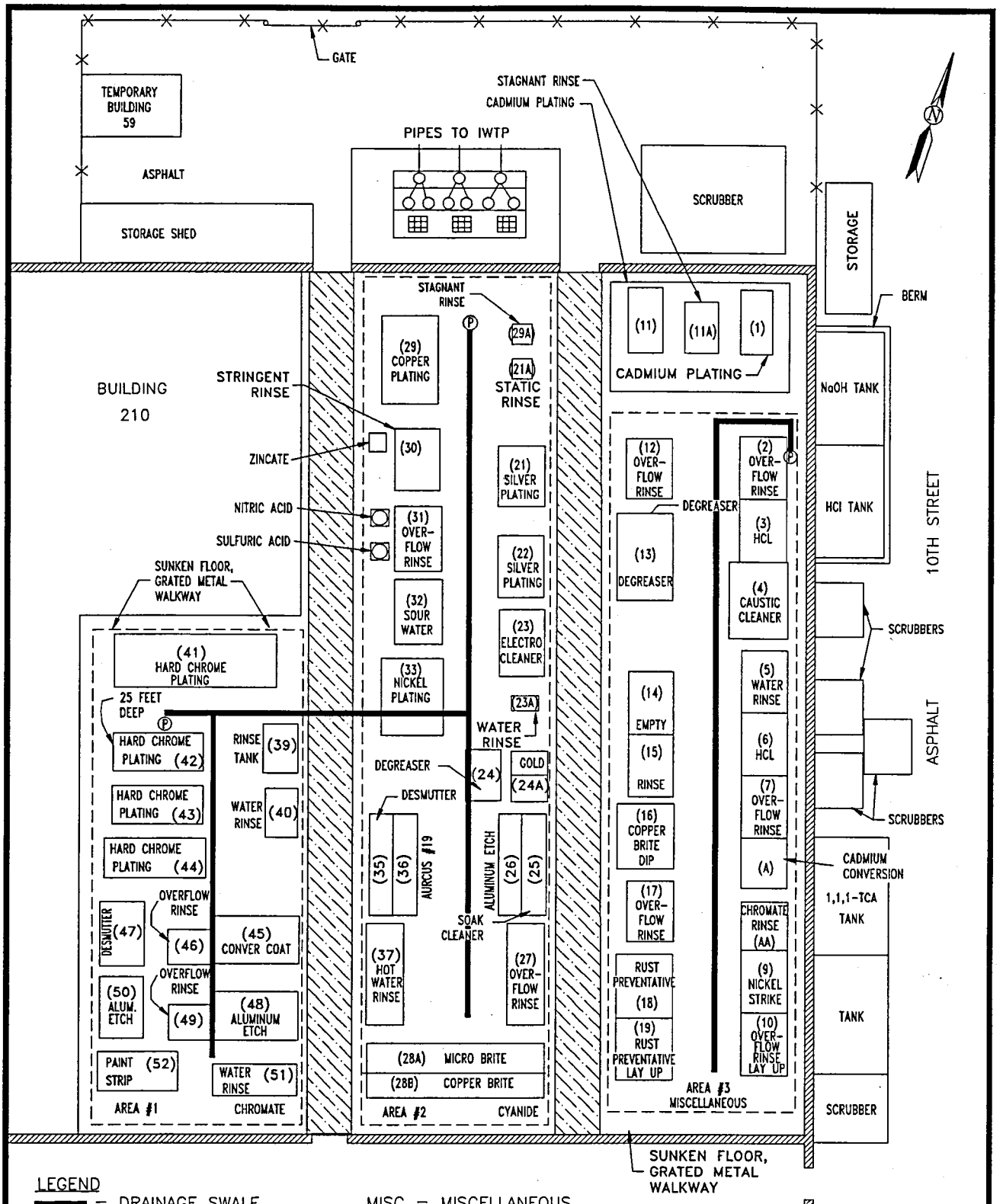

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.65-2
MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

AOC PT 1
PLATING SHOP
BUILDING 210

GROUP B AREAS OF CONCERN

FIGURE
4.65-2

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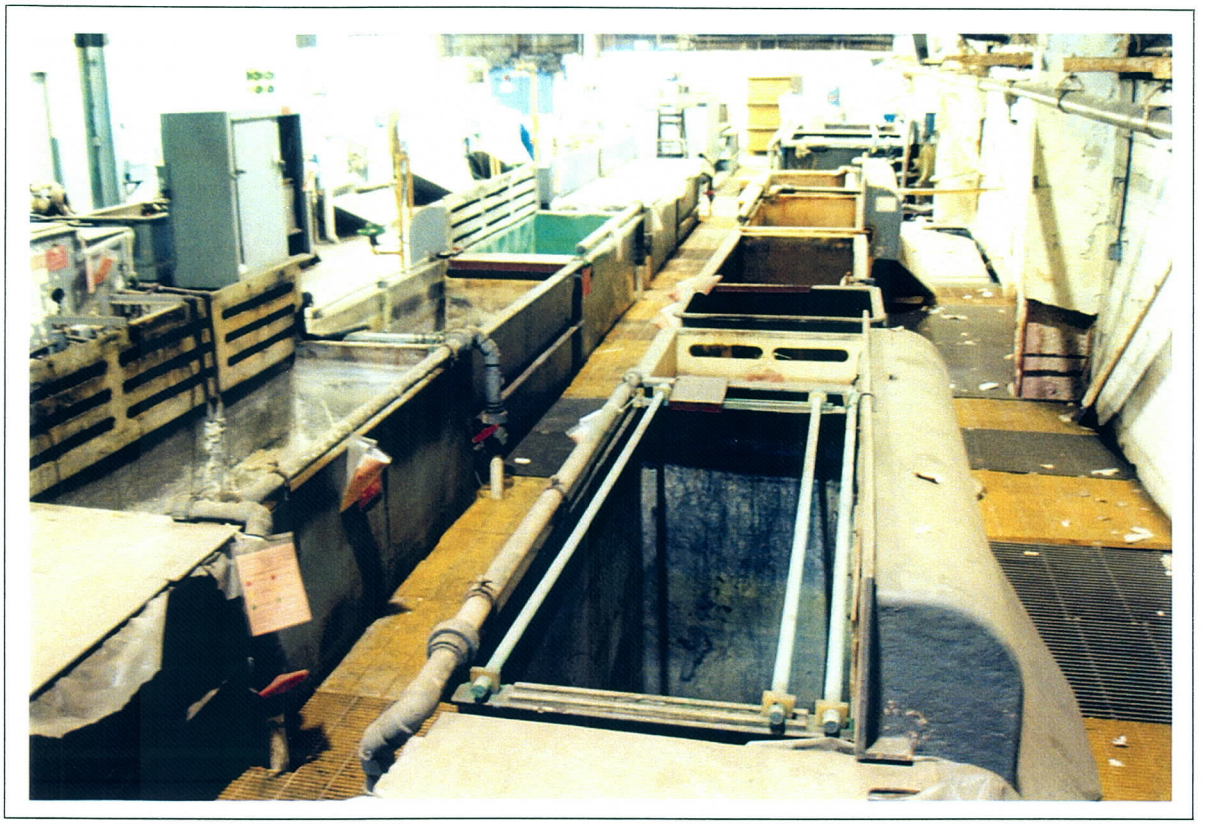
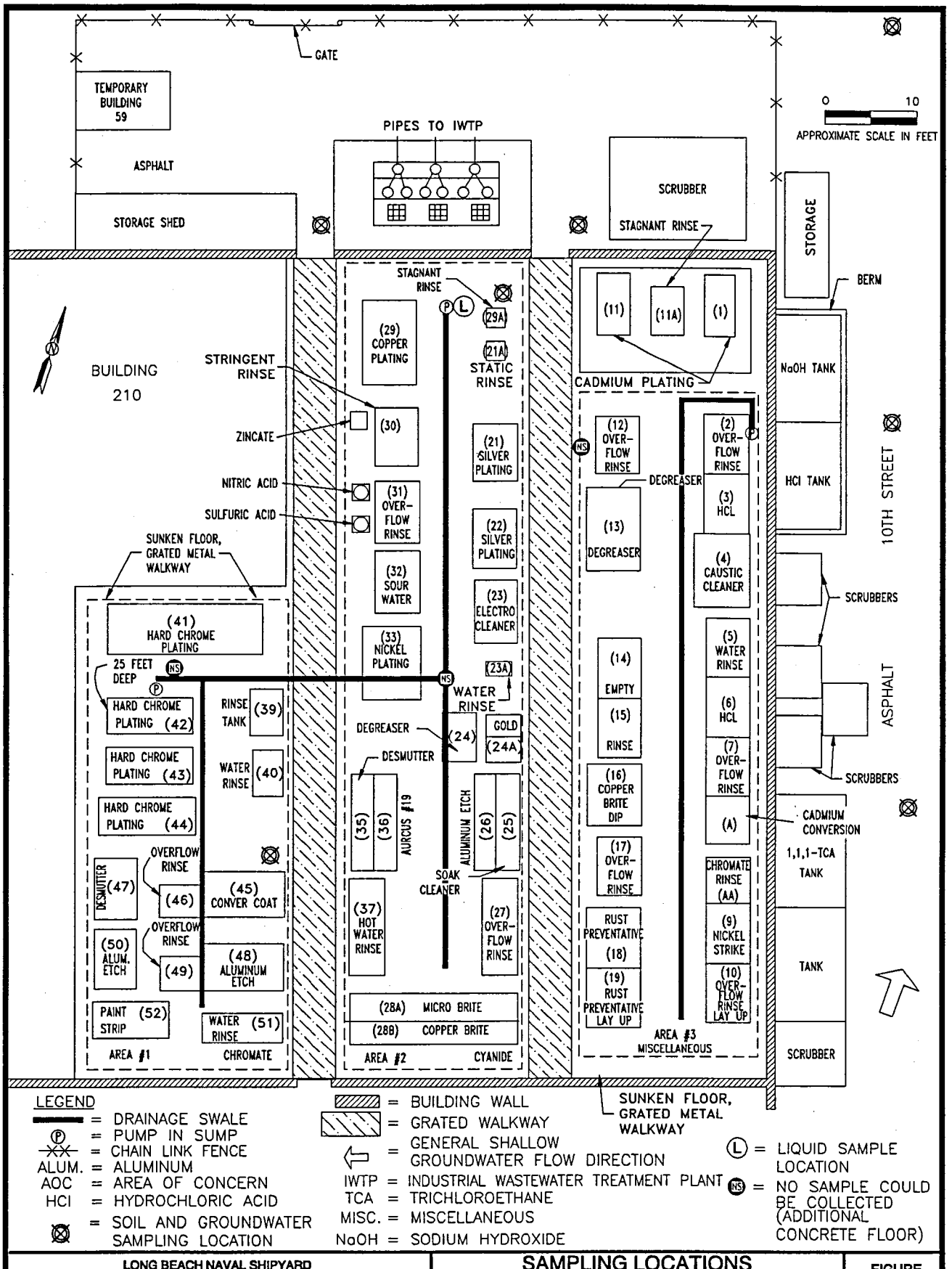


Figure 4.65-3 Building 210 Plating Shop (AOC PT 1), Tank 9 (foreground), Tanks 18, 17, 16 (left, front to back), Facing Northwest 6/16/98

Figure 4.65-4 AOC PT 1, Building 210, Tank 39 (left) and Tank 42 (right) Facing South 6/16/98

Figure 4.65-5 AOC PT 1, Building 210, Interior of Tank 41 with Chromic Acid, Facing West 3/11/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

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SAMPLING LOCATIONS AOC PT 1 PLATING SHOP BUILDING 210

GROUP B AREAS OF CONCERN

FIGURE 4.65-6

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Figure 4.65-7 Soil and Groundwater Sampling Outside the Building 210 Plating Shop (AOC PT 1), Facing South 6/10/98

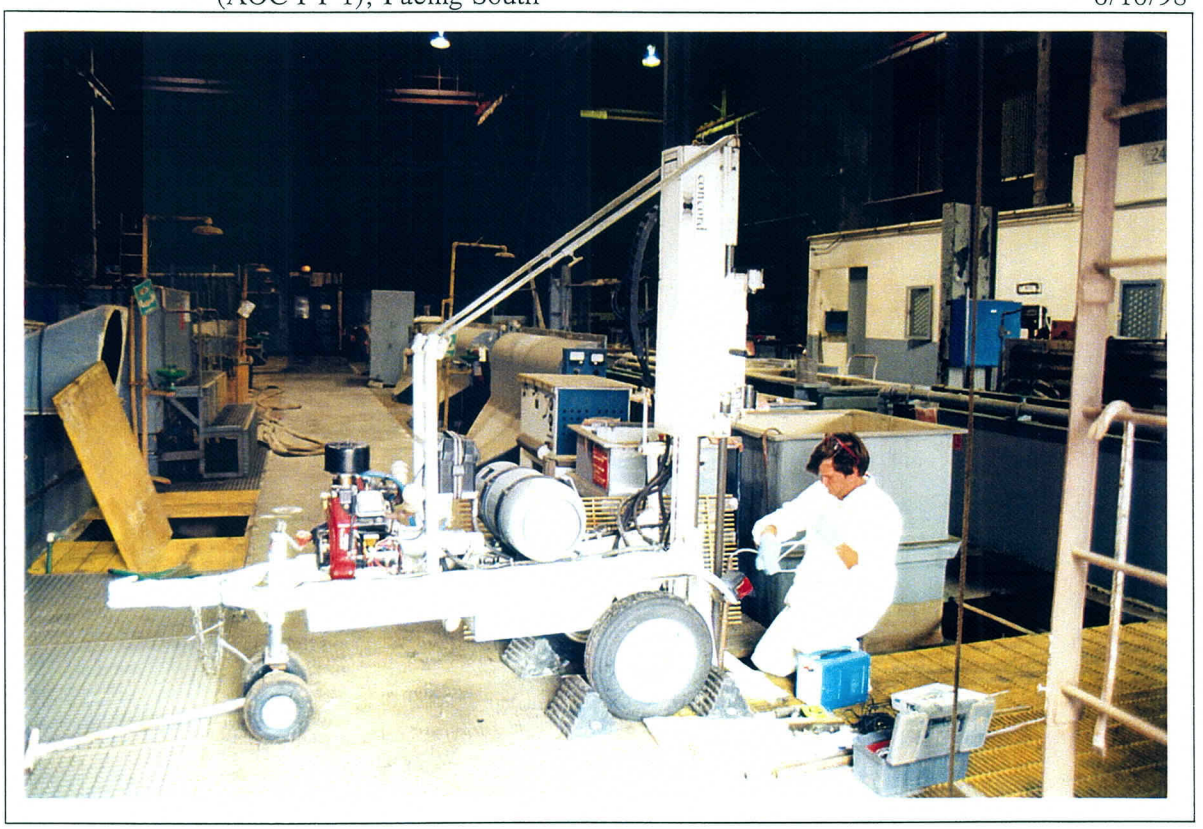


Figure 4.65-8 Soil and Groundwater Sampling Inside the Northern End of the Building 210 Plating Shop (AOC PT 1), Sample Location T01f, Facing South 6/16/98

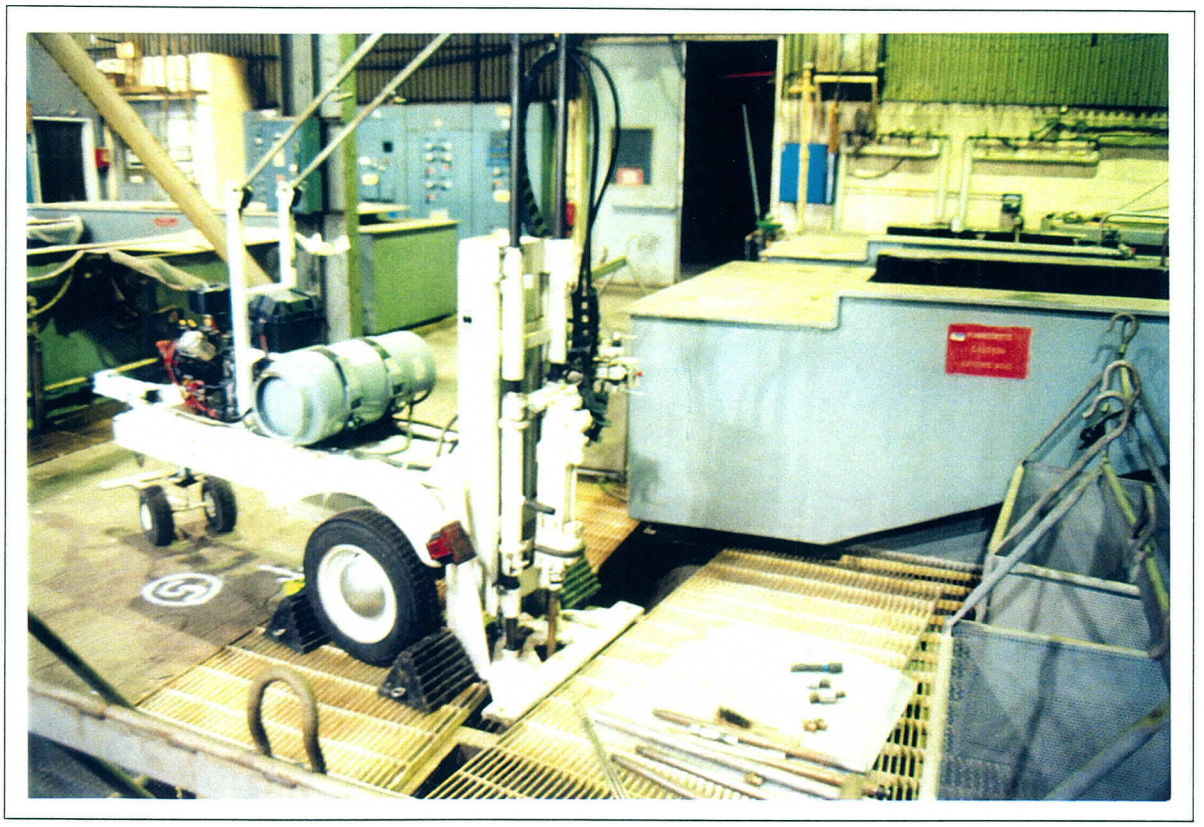
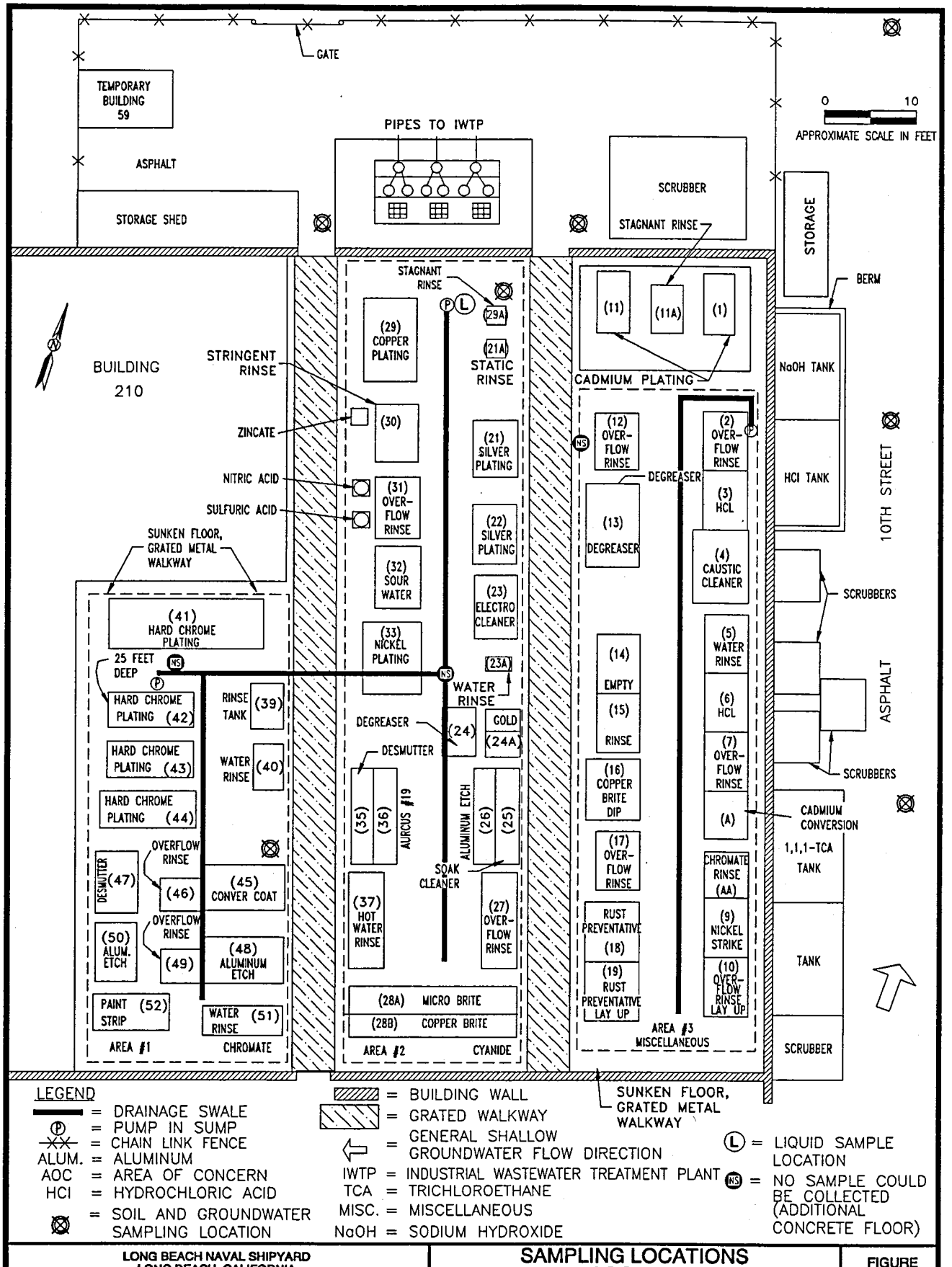


Figure 4.65-9 Soil and Groundwater Sampling Inside the Southwestern Section of the Building 210 Plating Shop (AOC PT 1), Sampling Location T01g, Facing Southeast 6/16/98

Figure 4.65-10 AOC PT 1, Building 210, Liquid Sampling Location T01k in Northern End of Plating Shop Adjacent to Tank 29A, Facing West 3/11/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

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SAMPLING LOCATIONS AOC PT 1 PLATING SHOP BUILDING 210

GROUP B AREAS OF CONCERN

FIGURE 4.65-11

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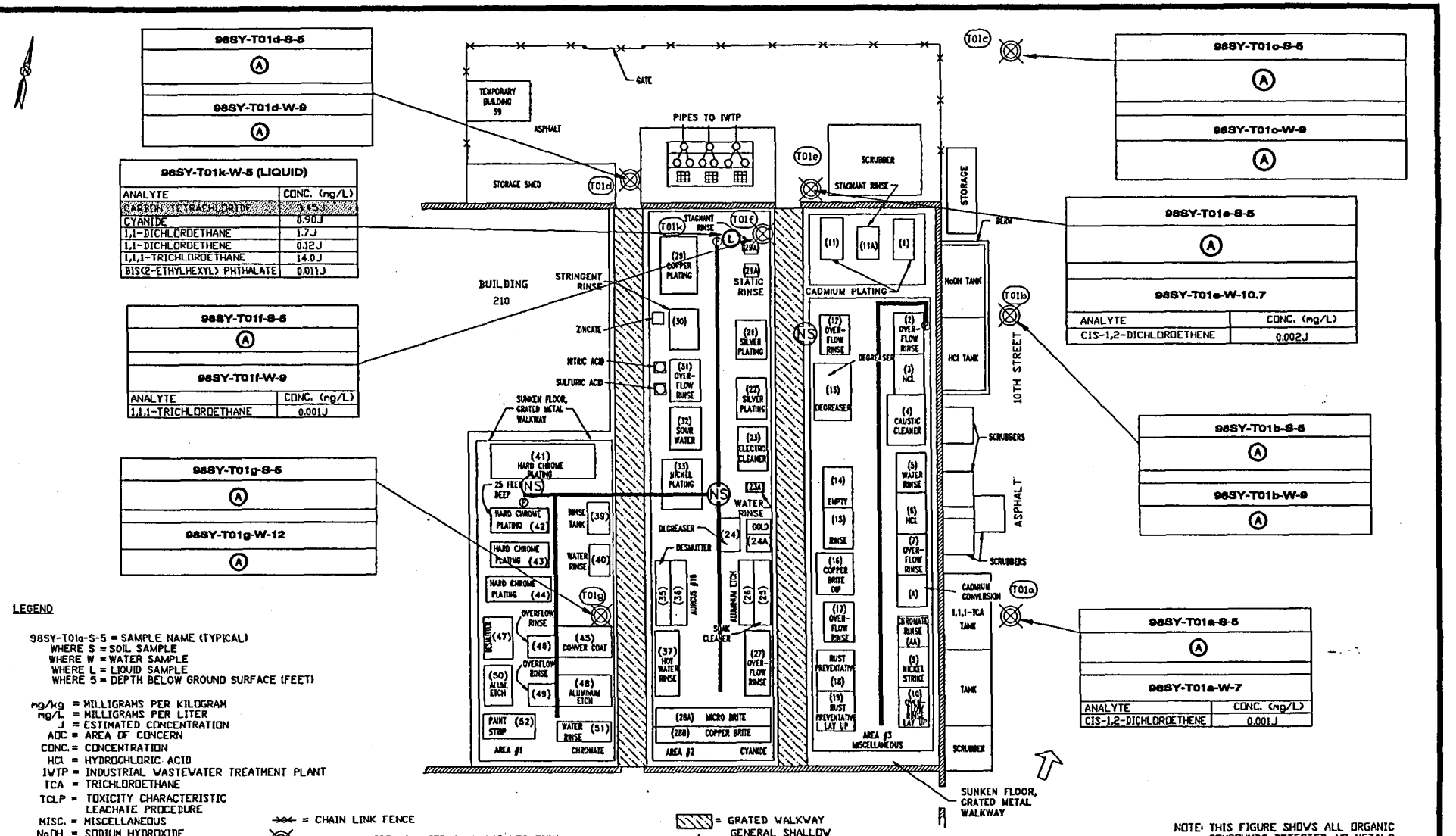

LEGEND

98SY-T01a-S-5 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE L = LIQUID SAMPLE
WHERE 5 = DEPTH BELOW GROUND SURFACE (FEET)

ng/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATION
AOC = AREA OF CONCERN
CONC. = CONCENTRATION
HCl = HYDROCHLORIC ACID
IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT
TCA = TRICHLORDETHANE
TCLP = TOXICITY CHARACTERISTIC LEACHATE PROCEDURE
MISC. = MISCELLANEOUS
NaOH = SODIUM HYDROXIDE
PT = PROCESS TANK
ALUM. = ALUMINUM
= DRAINAGE SWALE
P = PUMP IN SUMP
L = LIQUID SAMPLE LOCATION
= CHAIN LINK FENCE
= SOIL AND GROUNDWATER SAMPLING LOCATION
T01a = SAMPLE IDENTIFIER
NS = NO SAMPLE COULD BE COLLECTED BECAUSE ADITIONAL CONCRETE FLOOR WAS ENCOUNTERED FOUR FEET BENEATH THE MAIN FLOOR DURING SAMPLING.
= GRATED WALKWAY
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= BUILDING WALL
A = NO ORGANICS OR CYANIDE DETECTED, AND NO METALS ABOVE SCREENING CRITERIA.
= SHADED CARBON TETRACHLORIDE IN LIQUID SAMPLE EXCEEDED TCLP CRITERIA OF 0.5 ng/L.

NOTE: THIS FIGURE SHOWS ALL ORGANIC COMPOUNDS DETECTED. NO METALS EXCEEDED SCREENING CRITERIA.

0 10 20
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 6/99
FN: 4.65-12
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PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC PT 1
PLATING SHOP
BUILDING 210
GROUP B AREAS OF CONCERN

FIGURE
4.65-12

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4.65-24

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4.66 PLATING SHOP, BUILDING 129 (AOC PT 2)

This section presents a description of the Building 129 Plating Shop (AOC PT 2), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.66.1 Site Description

Table 4.66-1 summarizes the location and characteristics of AOC PT 2. A site location map is provided as Figure 4.66-1. Site photographs are shown in Figures 4.66-2 and 4.66-3. Figure 4.66-4 shows the sampling location and sampling results.

Table 4.66-1
AOC PT 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 2	Northwestern corner of Building 129	D-30	Electroplating Shop	Room containing 33 aboveground tanks; concrete floor.	Tanks ranging in size from 45 to 2,800 gallons.

AOC = Area of Concern No. = Number PT = Process Tank

The northwestern corner of Building 129 previously contained 33 aboveground tanks ranging in size from 45 to 2,800 gallons. Plating may also have occurred outside the northern end of Building 129 (see Figure 4.66-1). All tanks previously located in the Building 129 Plating Shop are no longer located there.

During the March 1998 site reconnaissance, the floor area inside the northwestern corner of Building 129 was observed to be made of concrete and showed no evidence of former plating shop activities. Large overhead conveyors were still located on the ceiling of this area. The area outside the former Building 129 plating shop was paved with asphalt and showed signs of cracking, but no evidence of past plating operations.

Building 129 is designated as IR Site 9 and has been investigated under separate projects (BNI 1997a, 1999).

4.66.2 Operational History and Waste Characteristics

Table 4.66-3 summarizes the operational history and waste characteristics of AOC PT 2.

Table 4.66-2
AOC PT 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT2	Early 1940s to 1974	Degreasing/cleaning, electroplating, and rinsing	Cadmium, chromium, nickel, copper, silver, cyanide, rinse water; hydrochloric, sulfuric, and nitric acids; and solvent degreaser TCE.	See Table 4.66-3

AOC = Area of Concern
No. = Number
PT = Process Tank
TCE = Trichloroethylene

The northwestern corner of Building 129 was used as a plating shop area from the 1940s to approximately 1974. At that time, plating activities were moved to Building 210 (Section 4.65) and the northwestern corner inside Building 129 was used as an air compressor shop until approximately 1996 when LBNSY operations ceased.

The exact location of all tanks is not known; Figure 4.66-1 shows their locations as identified on historical drawings. The "Tin Plating" area identified on Figure 4.66-1 (LBNYS-PW 1945) was not identified on the 1969 IWS list of tanks shown in Table 4.66-3 indicating that tin plating was no longer being performed (Brown and Caldwell 1969).

Tank contents were drained at various intervals, ranging from continuous draining to draining every six years, depending on the frequency of use of the tanks in the shops. The majority of wastes, including sludge generated from various processes, was disposed into the sanitary sewer, while other wastes were hauled away by LBNSY Shop 72 personnel (Brown and Caldwell 1969). Little information is known about the day-to-day operations at AOC PT 2. LBNSY personnel who were interviewed in 1998 were not present during the shop's operation, and few documents even mention the operations. Due to the nature of the operation and the disposal methods, it is possible that spills occurred in and around the plating shop.

Table 4.66-3 lists 33 aboveground tanks that were located in the plating area of Building 129, the chemicals used, and the capacity of each of the tanks.

Table 4.66-3
AOC PT 2 Tank Contents and Use

Activities/Source of Waste	Chemicals Used in Process Tank	Capacity (gallons)
Chromium Conversion of Aluminum:		
1 cleaning tank	Cee Bee A-51A, alkaline, detergent.	700
1 satin etch tank	Cee Bee Satin Etch-mixture of alkaline salts and sequestering agents.	700
1 desmutter tank	Cee Bee A606-inorganic acids hexavalent chromium compounds, inorganic fluorides.	700
1 cover coat tank	Cee Bee Konverkote No. 1 hexavalent chromium compounds.	700
1 paint stripping tank	Cee Bee C-226, moderately alkaline, chlorinated solvents, phenolic bodies, sodium chromate.	1875
2 rinse tanks	None	1400
Total Cleaning Prior to Cadmium and Silver Plating:		
1 caustic tank	Cee Bee 314-highly alkaline, caustic soda.	1500
1 hydrochloric acid pickle tank	Hydrochloric acid	250
1 bright dip tank	Sulfuric and nitric acids.	400
1 chromic acid tank	MacDermid CU-20, chromate type compound, brite dip.	150
1 rinse tank	None	500
Cadmium Plating:		
2 cadmium plating tanks	Sodium hydroxide, sodium cyanide.	1000
1 Iridite tank	Iridite 8P-chromate conversion coating, nitric acid.	45
1 rinse tank	None	500
Silver Plating:		
1 silver plating tank	Silver cyanide, potassium cyanide.	370
1 rinse tank	None	500
Copper Plating:		
1 cleaning tank	Cee Bee PC-77, alkali mixture, Temperature 180 °F.	300
1 plating tank	Potassium cyanide, potassium hydroxide, copper, cyanide.	600
Nickel Plating:		
1 plating tank	Single nickel salts, nickel chloride, boric acid, sulfuric acid, Temperature 140 °F.	600
Hard Chrome Plating:		
3 hard chrome tanks	Chromic acid, barium carbonate.	2800
1 rinse tank	None	250
Nickel Strike:		
1 nickel strike tank	Nickel chloride, hydrochloric acid.	370
1 sour water tank	Kemtex #45-hydrochloric and muriatic acid salt mix.	600
Phosphate coating (process began in 1969):		
1 alkaline cleaner tank	Coral AL-Clean No. 72, Temperature 160 °F, non-etchant aluminum soak cleaner.	800
1 zinc phosphate tank	Coral Sur Coat 2000- pH 2.5 to 2.7, zinc phosphate compound.	600
1 manganese phosphate tank	Coral Sur Coat 5000-manganese phosphate compound.	600
1 inhibitive seal tank	Coral IPR-chromic acid pH 2.8+/-	800
1 oil tank	Lube oil	400
Degreaser:		
1 degreaser tank	Trichloroethylene	110

Notes:

Source: Appendix A of *Industrial Waste Study*, 1969, Brown and Caldwell.

AOC = Area of Concern
°F = Degrees Fahrenheit
No. = Number
PT = Process Tank

4.66.3 Preliminary Assessment Resources

Resources used for the PA for this AOC are listed in Table 4.66-4.

Table 4.66-4
AOC PT 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 1522	1945	LBNSY-PW	Fume exhaust system alterations at Building 129 Plating Shop shows shop location, partial layout of tanks
Drawing No. 4445	1948	LBNSY-PW	Shows several tanks located outside Building 129.
Drawing No. 5011	1954	LBNSY-PW	Shows addition of plating shop outside and adjacent to the northwestern corner of Building 129.
Industrial Waste Study (IWS)	1969	Brown and Caldwell	Plating shop was active. General operations and wastes generated.
LBNSY Milcon 9930 P-082 Drawing	1972	LBNSY Milcon P-082	Conversion of Electroplating Marine Machine Shop.
Initial Assessment Study	1983	NEESA	AOC PT 2 not operating.
RCRA Facility Assessment	1989	DTSC	AOC PT 2 not operating.
Industrial Process Assessment Report	1995	NFESC	AOC PT 2 not operating.
Personnel Interview	1998	Johnson LBNSY-ED	Recalled some plating activities outside northwestern corner of Building 129.
Personal Interview	1998	Nunn LBNSY-ED	Did not recall plating shop at northwestern corner of Building 129.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
LBNSY-ED = Long Beach Naval Shipyard-Environmental Department
LBNSY-PW = Long Beach Naval Shipyard-Public Works
NFESC = Naval Facilities Engineering Service Center
No. = Number
PT = Process Tank
RCRA = Resource Conservation and Recovery Act

4.66.4 PA Recommendations

Based on PA findings, further action was recommended for AOC PT 2. The nature of AOC PT 2 operations suggests that spills or leaks may have occurred over the approximately 25 to 30 years of operation and may have impacted the soil and groundwater in this area. Soil and groundwater were recommended for sampling in the Work Plan (CDM Federal 1998a) to assess whether wastes may have impacted the soil and/or groundwater directly beneath the plating shop. Samples were planned for analysis of metals (including hexavalent chromium), VOCs, cyanide, and pH. Many soil and groundwater samples to the north of Building 129 were collected and analyzed as part of other investigations for IR Site 9 (BNI 1997a, 1998), so only one soil and one groundwater sample directly beneath the floor of the former plating shop were recommended in the Work Plan (CDM Federal 1998a).

4.66.5 Number of Samples and Analyses

One soil and one groundwater sample were collected beneath the concrete floor inside the northwestern corner of Building 129 (see Figure 4.66-4) on 11 June 1998. The samples were analyzed for the analytical categories indicated in Table 4.66-5. The soil sample was collected at a depth of one foot bgs, while the groundwater sample was collected at a depth of seven feet bgs.

Table 4.66-5
AOC PT 2 Number of Samples and Analyses

Matrix	VOCs	Metals	Cyanide	Cr^{+6}	pH
Soil	1	1	1	1	1
Groundwater	1	1[(a)]	1	1	1

Notes:

(a) Dissolved metals.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
PT = Process Tank
VOCs = Volatile Organic Compounds

4.66.6 Analytical Results

Analytical results for the AOC PT 2 soil and groundwater samples are summarized in Tables 4.66-6 and 4.66-7 and in Figure 4.66-4.

4.66.6.1 Soil

No VOCs, cyanide, or hexavalent chromium were detected in the soil sample collected at AOC PT 2. Eleven of the seventeen metals analyzed were detected in the soil. The soil pH result was 8.06.

4.66.6.2 Groundwater

Cis-1,2-dichloroethene was the only VOC detected, at a concentration of 0.001J mg/L. Cyanide and hexavalent chromium were not detected. The two metals detected in the groundwater sample were barium and molybdenum. The pH of the groundwater sample was 7.12.

A known area of chlorinated solvent groundwater contamination is centered about 250 feet to the north of Building 129 beneath Building 216. The concentration of 1,2-dichloroethene (total) is as high as 0.29 mg/L in that area. The 1,2-dichloroethene concentration of 0.001J mg/L detected in sample 99SY-US2a-W-9.6 as part of this AOC investigation appears to be at the edge of groundwater contamination that is centered beneath Building 216 (BNI 1997a, 1999).

4.66.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.66.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as

described in Section 3.5.3. For this site, no sample data were rejected and data qualifiers were applied to the sample as described in Appendix O.

4.66.9 Recommendations

No further action is recommended for AOC PT 2 because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.66-6
AOC PT 2 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above PRG**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
cis-1,2-Dichloroethene	1	0	ND	150	0	1	1	0.001J	0.006[d]	0

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound

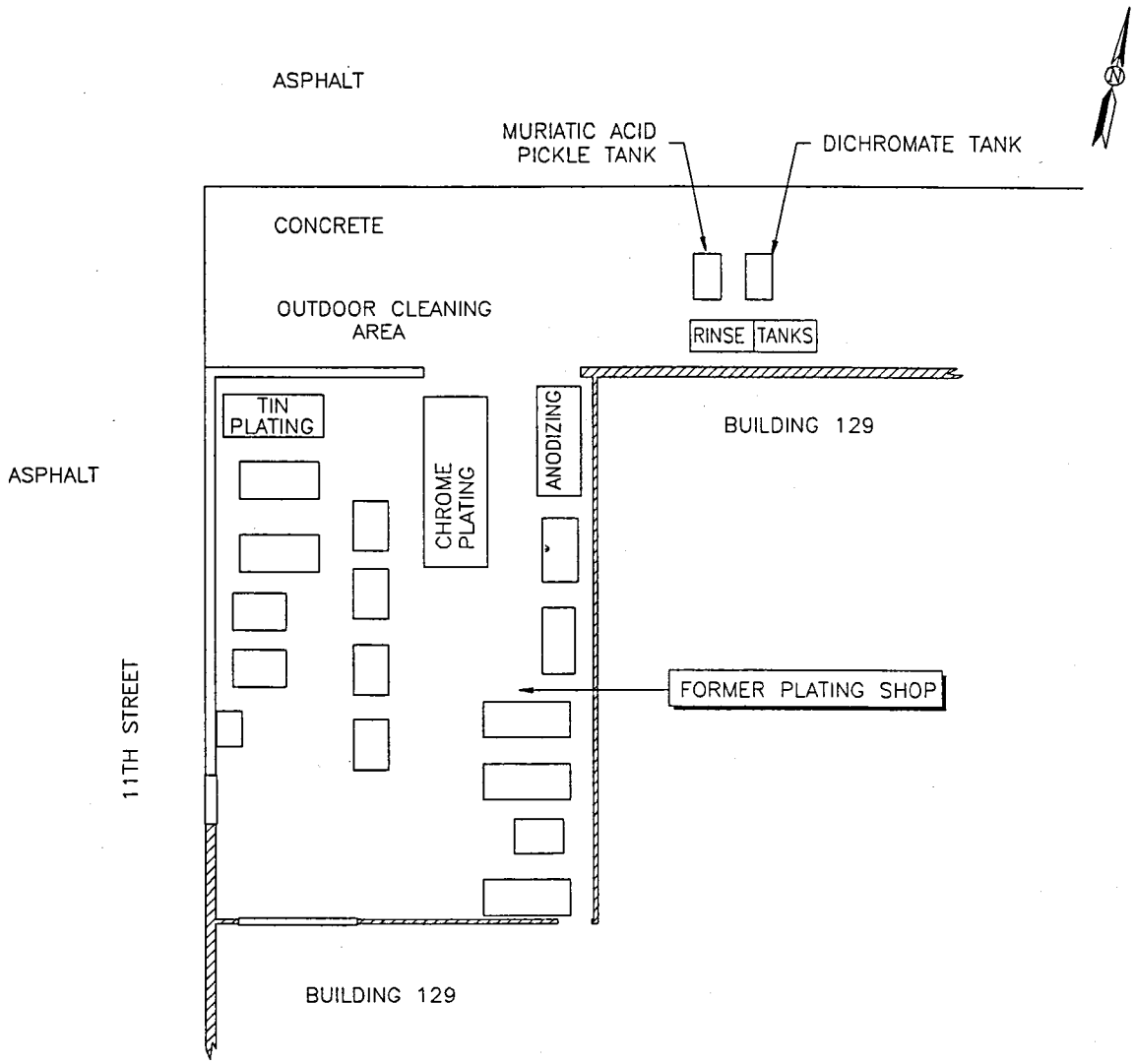
Table 4.66-7
AOC PT 2 Sampling Results Summary for Inorganic Compounds
June 1998

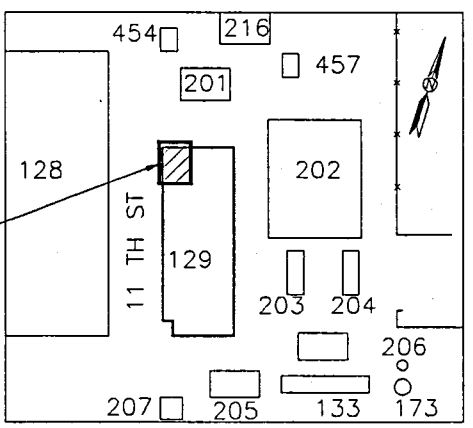
	SOIL					GROUNDWATER				
Analytical Parameter	No. of Samples	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above PRGs and Background	No. of Samples	Dissolved Concentration (mg/L)	Screening Criteria for Water[c] (mg/L)	Background Level[b] (mg/L)	No. of Detections above Criteria
Antimony	1	ND	750	11.3	0	1	ND	1.2	0.0616	0
Arsenic	1	4.1	3.0	17.5	0	1	ND	0.008	0.0276	0
Barium	1	74.7	100,000	275	0	1	0.170J	1[d]	0.1777	0
Beryllium	1	ND	3,400	1.4	0	1	ND	$3.3x10^{-5}$	0.002	0
Cadmium	1	ND	930	1.7	0	1	ND	0.001	0.0017	0
Chromium	1	14.6	450	60.9	0	1	ND	190	0.0029	0
Cobalt	1	8.2	29,000	24.5	0	1	ND	2.2[d]	0.0071	0
Copper	1	10.9	70,000	798.7	0	1	ND	0.003	0.1072	0
Lead	1	3.4	1000	185.2	0	1	ND	0.002	0.028	0
Mercury	1	0.031	560	2.5	0	1	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	1	ND	9,400	NA	0	1	0.0061	0.18[d]	NA	0
Nickel	1	11.1	37,000	32.6	0	1	ND	0.005	0.0958	0
Selenium	1	ND	9,400	1.4	0	1	ND	0.015	0.040	0
Silver	1	0.12	9,400	1.5	0	1	ND	0.0007	0.0072	0
Thallium	1	ND	150	4.2	0	1	ND	0.014	0.0075	0
Vanadium	1	27.7	13,000	84.9	0	1	ND	0.26[d]	0.0107	0
Zinc	1	44.2	100,000	844.9	0	1	ND	0.020	0.291	0
Cr^{+6}	1	0	ND	64	0	1	0	ND	0.002	0
Cyanide	1	0	ND	35	0	1	0	ND	0.01	0
pH	1	1	8.06 (pH units)	NA	0	1	1	7.12 (pH units)	6.0 to 9.0 (pH units)	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank





LEGEND

AOC = AREA OF CONCERN
HWF = HAZARDOUS WASTE FACILITY
LBNSY = LONG BEACH NAVAL SHIP YARD
PW = PUBLIC WORKS
PT = PROCESS TANK
▭ = FORMER TANK LOCATIONS
—×—×— = CHAIN LINK FENCE
▨ = BUILDING WALL

SOURCE: LBNSY PW DRAWING NUMBER 15224445, AND 5011
NOTE: PLATING SHOP WAS REMOVED IN 1974.
NOTE: EXACT LAYOUT AND IDENTIFICATION FOR ALL TANKS IS UNKNOWN

SCALE: 1"=20'

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC PT 2 PLATING SHOP BUILDING 129	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.66-1		4.66-1
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.66-2 Outside Former Plating Shop, Building 129 (AOC PT 2), Facing East 1/14/98

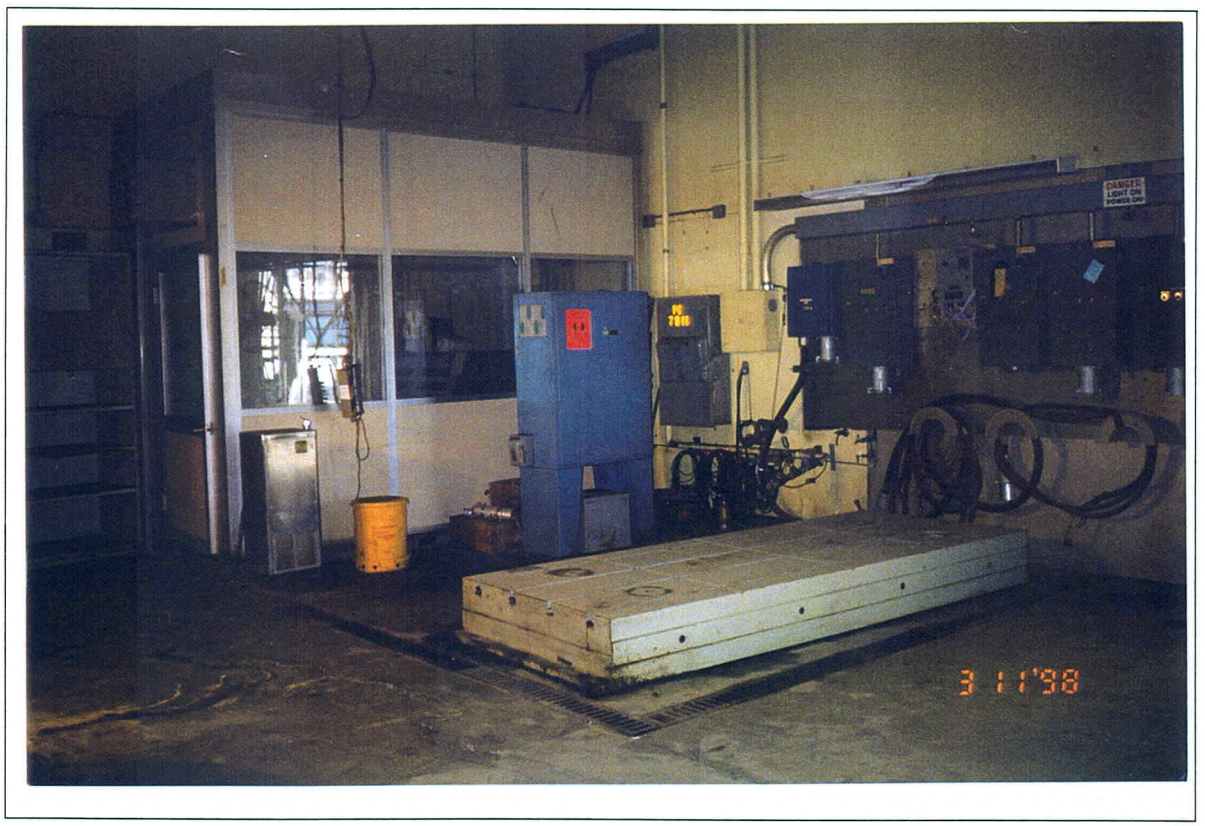
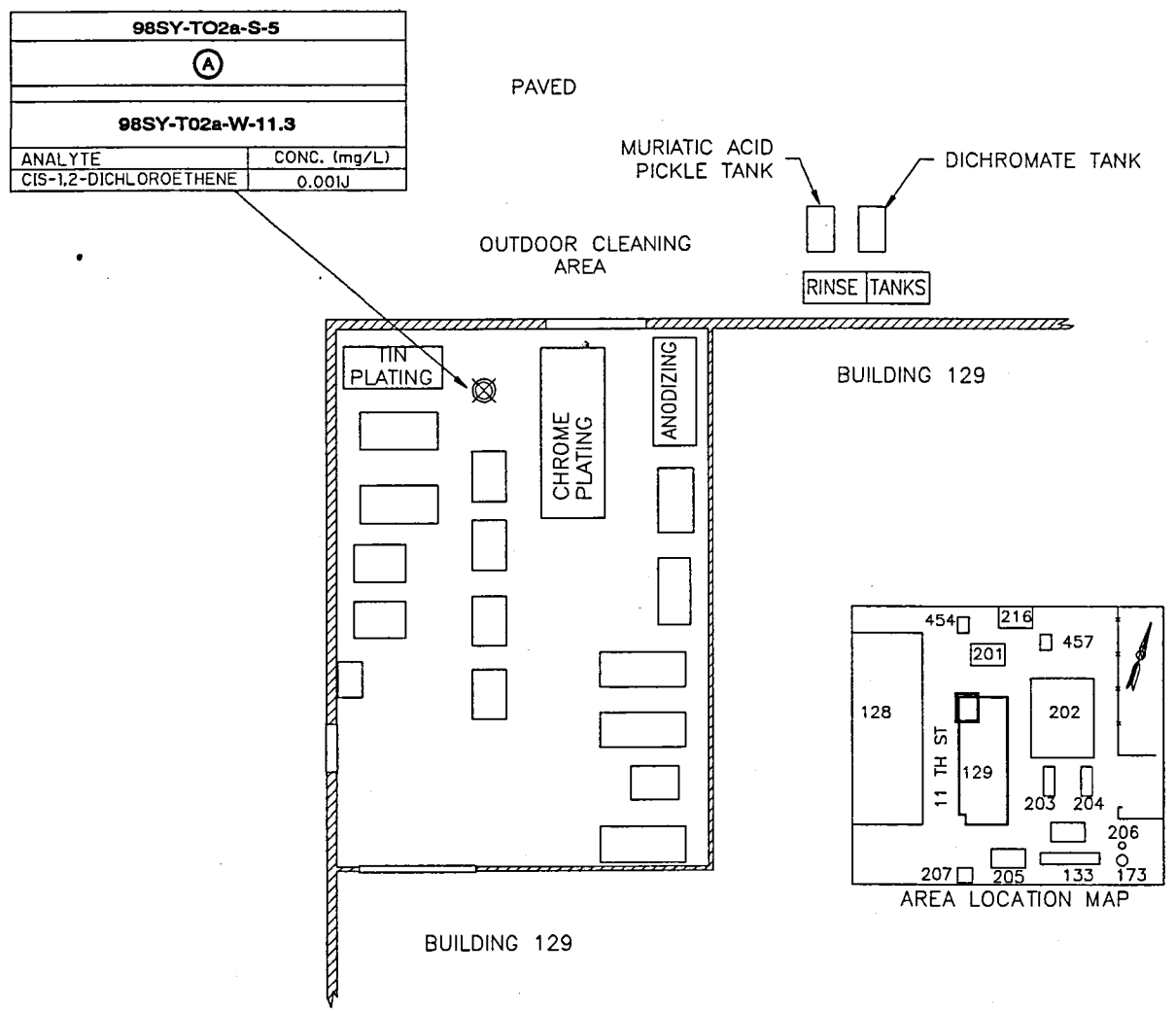


Figure 4.66-3 Former Plating Shop, Inside Building 129 (AOC PT 2), Facing Northwest 1/14/98



LEGEND

AOC = AREA OF CONCERN

Ⓐ = NO ORGANIC COMPOUNDS DETECTED AND NO METALS ABOVE SCREENING CRITERIA.

⊗ = SOIL AND GROUNDWATER SAMPLING LOCATION

98SY-T02a-S-5 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 5 = DEPTH BELOW GROUND SURFACE (FEET)
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION

NOTES: PLATING SHOP WAS REMOVED IN 1974. EXACT LAYOUT AND IDENTIFICATION FOR ALL TANKS ARE UNKNOWN.

THIS FIGURE SHOWS ALL ORGANIC DETECTIONS. NO METALS EXCEEDED SCREENING CRITERIA.

0 10 20
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.66-4

MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC PT 2
PLATING SHOP
BUILDING 129
GROUP B AREAS OF CONCERN

FIGURE
4.66-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.67 METAL CLEANING/PLATING SHOP, BUILDING 205 (AOC PT 3)

This section presents a description of the Building 205 Metal Cleaning/Plating Shop (AOC PT 3), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.67.1 Site Description

Table 4.67-1 summarizes the location and characteristics of AOC PT 3. A site map is shown in Figure 4.67-1 and site photographs are shown in Figures 4.67-2 and 4.67-3.

Table 4.67-1
AOC PT 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 3	Southern end of Building 205.	F-31	Facility used for cleaning engines from Building 129. Possibly used for plating.	Eleven aboveground tanks, containing solvent degreasers including TCE.	Each tank was approximately 10 feet long by 4 feet wide and ranged from 6 to 8 feet in depth.

AOC = Area of Concern
No. = Number
PT = Process Tank
TCE = Trichloroethylene

Building 205, located southeast of Building 129 and north of Sullivan Street, is approximately 86 feet by 72 feet by 39 feet high. During the March 1998 site reconnaissance, AOC PT 3 was observed to consist of two large floor areas; one bermed and the other unbermed as indicated in Figure 4.67-1. The bermed area was surrounded by a berm that is approximately one foot high; inside the bermed area was a four-inch high, raised, concrete platform. Potential spills from cleaning tank operations would have been contained in the platform area. Building 205 was observed to have concrete brick and corrugated metal walls on the eastern, western, and southern sides. The concrete walls were observed to be approximately nine feet high, after which corrugated metal walls extended approximately another 30 feet for a total height of 39 feet. The roof was also constructed of corrugated metal and was supported by a steel beam structure. Located on the ceiling was a conveyor system and associated tracking presumably used for transporting the metal parts to the cleaning tanks and then back to a transport vehicle. It appeared that the concrete floors were in good condition and showed no evidence of staining or past cleaning tank or plating shop operations.

4.67.2 Operational History and Waste Characteristics

Table 4.67-2 summarizes the operational history and waste characteristics of Building 205, Metal Cleaning/Plating Shop AOC PT 3.

Table 4.67-2
AOC PT 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 3	Approximately 1978 to the late 1980s.	Cleaning facility using degreasing solvents to clean engines from Building 129.	Used degreasers, oils, and/or grease from cleaning operations.	Unknown.

AOC = Area of Concern No. = Number PT = Process Tank

Building 205 was built in 1978 and improvements were possibly implemented to accommodate a high-bay rack storage area (Archiplan 1988). Figure 4.67-1 indicates the former location of the eleven cleaning tanks located in the bermed area of Building 205. The tanks were used beginning in 1978, while by 1988 the tanks were rusted and no longer being used (Archiplan 1988). The 1988 Engineering Evaluation performed by Archiplan identified Building 205 as the "Plating Shop - Chemical Cleaning," and the EBS also identified the building as a plating shop; however, no other evidence that Building 205 housed plating shop activities was found. Instead, it appears that Building 205 contained cleaning tanks.

According to LBNSY personnel, machine parts were transported from Building 129 and dipped in cleaning tanks at Building 205. The facility had proper containment berms, but LBNSY personnel indicated that spills occurred and that housekeeping at the cleaning tanks was poor. Specific degreasers used at the facility are unknown, but likely included TCE and sodium nitrate (a rust inhibitor) (Johnson, pers. comm. 1998).

Steam-cleaning activities, conducted both inside and outside the eastern portion of Building 205, were used in conjunction with the cleaning operations. Several drains and two sumps (numbered 205.1 and 205.2) were associated with the steam-cleaning operation. Sump 205.1, an OWS located outside Building 205 approximately 5.5 feet from the wall, measures approximately 13.5 inches by 65 inches by 80 inches deep and was empty during the 1996 EBS. Sump 205.2, located adjacent to the east side wall of Building 205, measures 3 feet by 6 feet by 9 feet deep and was full of drain water during the 1996 EBS. The drain was most likely used for steam cleaning operations both inside and outside Building 205. Sumps 205.1 and 205.2 are scheduled for removal under the Compliance Program in 1999, so are not addressed further in this section.

After cleaning operations were ceased in the late 1980s, the facility was used as a paper recycling center until closure of LBNSY (Johnson, pers. comm. 1998).

4.67.3 Preliminary Assessment Resources

Table 4.67-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.67-3
AOC PT 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	Lists Building 205 as a metal cleaning shop.
Update of Engineering Evaluation for LBNSY	1988	Archiplan	Figure showing cleaning tank locations at Building 205 and identifies building as "Plating Shop - Chemical Cleaning" activities.
Public Works Property Records	1996	LBNSY-PW	Describes the construction and dimensions of Building 205.
Separators, Clarifiers, and Sumps	1996	LBNSY-ED	Describes location, and characteristics of two sumps associated with Building 205.
Environmental Baseline Survey	1996	LBNSY-ED	Describes the function and use of Building 205 and identified the building as a Plating Shop.
Personnel Interview	1998	Johnson, LBNSY	Described general cleaning operations at Building 205.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Department
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PT = Plating Shop

4.67.4 PA Recommendations

Based on the PA findings, further action was recommended for AOC PT 3 because of the use of degreasing solvents, the potential for spills, and the lack of information regarding general operation and management of the facility. Work Plan Addendum Number 2 recommended that soil and groundwater sampling should be performed to assess whether wastes may have impacted the soil and/or groundwater beneath the cleaning shop (CDM Federal 1999). Soil and groundwater samples were recommended for analysis of metals, VOCs, SVOCs, PCBs, and TPH-diesel and-oil.

4.67.5 Number of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), five soil and five groundwater samples were collected at this AOC. Three sampling locations were inside the bermed area, one north of the bermed area, and one south of Building 205 as indicated in Figure 4.67-4. These samples were collected on 26 February 1999 and 1 March 1999 and analyzed for the analytical categories of concern as shown in Table 4.67-4. All soil samples were collected at a depth of approximately two feet below the asphalt pavement surface because the tanks had been situated aboveground.

Table 4.67-4
AOC PT 3 Number of Samples and Analyses

Sample Matrix	VOCs	SVOCs	Metals	PCBs	TPH-Diesel	TPH-Motor Oil
Soil	5	5	5	5	5	5
Groundwater	5	5	5	5	5	5

Notes:

(a) Dissolved Metals

AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
VOCs = Volatile Organic Compounds

4.67.6 Analytical Results

Sample results are summarized below, in Tables 4.67-5 and 4.67-6, and in Figure 4.67-5.

4.67.6.1 Soil

Three VOCs (PCE, 1,3-dichlorobenzene, and 1,1,1-trichloroethane) were detected in soil sample 99SY-PT3b-S-2. PCE was also detected in sample 99SY-PT3c-S-2. No VOCs were detected in the other soil samples. No SVOCs were detected in any soil samples at AOC PT 3. TPH-diesel and TPH-motor oil were detected in soil samples 99SY-PT3d-S-2 and 99SY-PT3e-S-2. PCBs were detected in soil samples 99SY-PT3a-S-2 and 99SY-PT3d-S-2 at a maximum concentration of 0.039 mg/kg.

Of the 17 metals analyzed, 13 were detected in one or more soil samples, as indicated in Table 4.67-6.

4.67.6.2 Groundwater

As indicated in Table 4.67-5, the VOC cis-1,2-dichloroethene was detected in two out of the five groundwater samples: 99SY-PT3d-W-12 (0.001J mg/L) and 99SY-PT3e-W-14.4 (0.004J mg/L). All other VOCs were not detected. The SVOC BEHP was detected in sample 99SY-PT3e-W-14.4. TPH-diesel, TPH-motor oil and PCBs were not detected in the any of the groundwater samples.

Three of the seventeen metals analyzed were detected in one or more of the groundwater samples, as indicated in Table 4.67-6.

4.67.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.67.8 Data Validation and Usability

Field QC samples were collected as previously discussed in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to the sample as described in Appendix O.

4.67.9 Recommendations

No further action is recommended for AOC PT 3 because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.67-5
AOC PT 3 Sampling Results Summary for Organic Compounds
February-March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Cis-1,2-Dichloroethene	5	0	ND	150	0	5	2	0.001J, 0.004J	0.006[e]	0
Tetrachloroethene	5	2	0.007, 0.003J	16	0	5	0	ND	0.099	0
1,3-Dichlorobenzene	5	1	0.002J	140	0	5	0	ND	5100	0
1,1,1-Trichloroethane	5	1	0.002J	1,400	0	5	0	ND	540	0
SVOCs (64 analytes)[c]										
Bis(2-ethylhexyl) phthalate	5	0	ND	210	0	5	1	0.003J	0.0035	0
TPH-Diesel	5	2	2J, 2J	10,000[d]	0	5	0	ND	NA	0
TPH-Motor Oil	5	2	3J, 7J	50,000[d]	0	5	0	ND	25	0
PCBs										
Aroclor 1260	5	2	0.039, 0.008J[f]	1.3	0	5	0	ND	$9x10^{-8}$	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Regional Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, dated May 1996. Values are for soils > 150 feet above the nearest drinking water aquifer.
(e) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(f) Sample 99SY-PT3e-S-2 contained pesticide/chlordane at an unknown concentration.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
PRG = Preliminary Remediation Goal
PT = Process Tank
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.67-6
AOC PT 3 Sampling Results Summary for Metals
February-March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	5	2	1.7, 1.6	750	11.3	0
Arsenic	5	5	2.7, 2.7, 2.3, 1.0, 4.0	3.0	17.5	0
Barium	5	5	51.1, 208J, 71.4J, 39.8J, 51.9	100,000	275	0
Beryllium	5	0	ND	3,400	1.4	0
Cadmium	5	2	0.35, 0.071	930	1.7	0
Chromium	5	5	11.0, 27.7J, 10.4J, 12.6J, 11.1	450	60.9	0
Cobalt	5	5	5.7, 12.8, 6.8, 3.8, 5.3	29,000	24.5	0
Copper	5	5	6.3, 51.4, 8.7, 10.4, 8.0	70,000	798.7	0
Lead	5	5	2.4, 14.8, 3.9, 1.9, 4.2	1,000	185.2	0
Mercury	5	3	0.17, 0.026, 0.022	560	2.5	0
Molybdenum	5	0	ND	9,400	NA	0
Nickel	5	5	7.6, 31.3, 10.6, 6.9, 8.2	37,000	32.6	0
Selenium	5	1	0.61	9,400	1.4	0
Silver	5	0	ND	9,400	1.5	0
Thallium	5	0	ND	150	4.2	0
Vanadium	5	5	19.9, 29.9, 21.7, 15.6, 19.8	13,000	84.9	0
Zinc	5	5	27.0, 64.3, 28.2, 21.7, 37.7	100,000	844.9	0

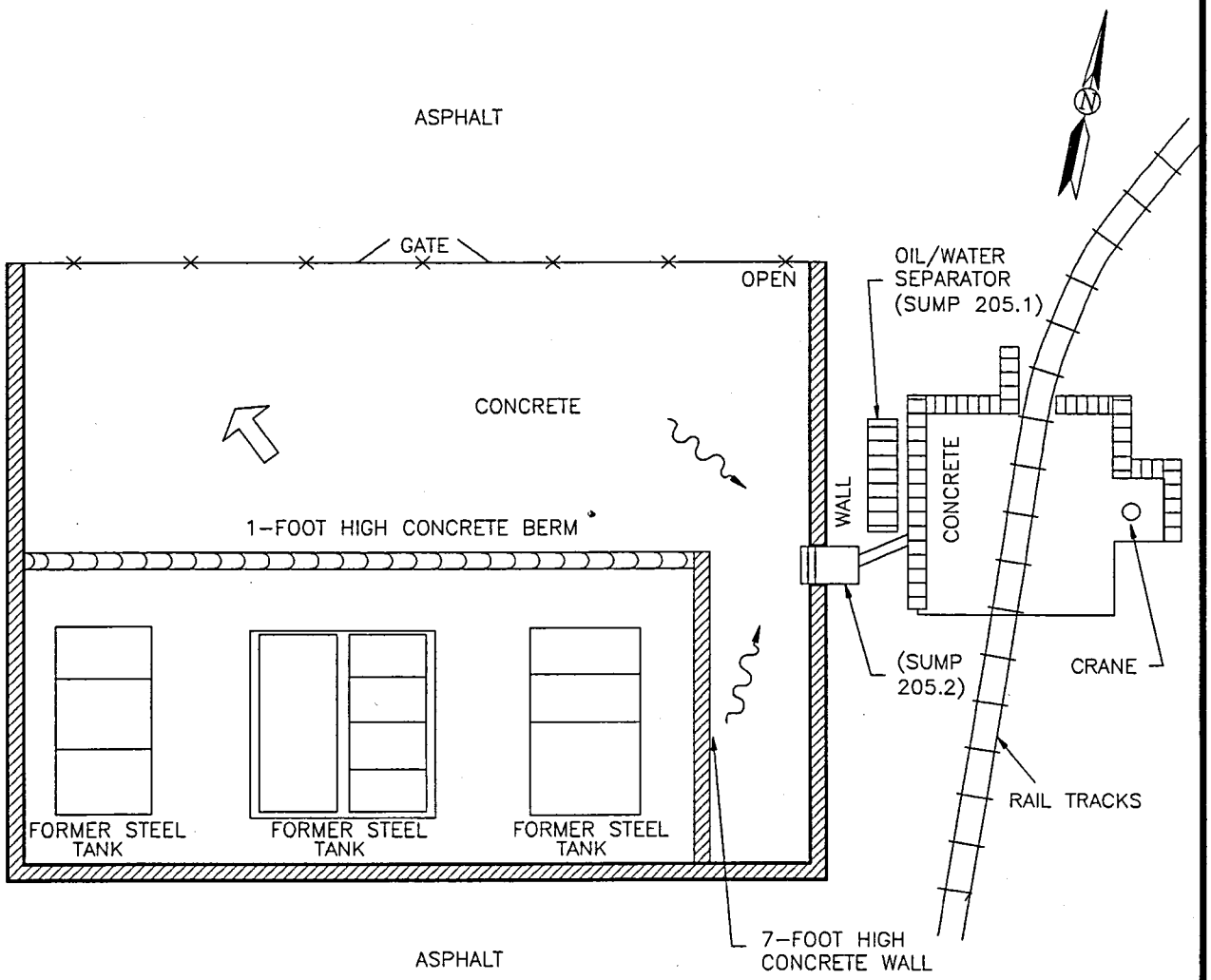
Table 4.67-6 (continued)
AOC PT 3 Sampling Results Summary for Metals
February-March 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	5	0	ND	1.2	0.0616	0
Arsenic	5	0	ND	0.008	0.0276	0
Barium	5	5	0.0862J, 0.108J, 0.124J, 0.127J, 0.856J	1[d]	0.1777	0
Beryllium	5	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	5	0	ND	0.001	0.0017	0
Chromium	5	0	ND	190	0.0029	0
Cobalt	5	0	ND	2.2[d]	0.0071	0
Copper	5	0	ND	0.003	0.1072	0
Lead	5	0	ND	0.002	0.028	0
Mercury	5	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	5	0	ND	0.18[d]	NA	0
Nickel	5	1	0.0116J	0.005	0.0958	0
Selenium	5	5	0.0085, 0.0074, 0.0086, 0.0079, 0.0087	0.015	0.040	0
Silver	5	0	ND	0.0007	0.0072	0
Thallium	5	0	ND	0.014	0.0075	0
Vanadium	5	0	ND	0.26[d]	0.0107	0
Zinc	5	0	ND	0.020	0.291	0

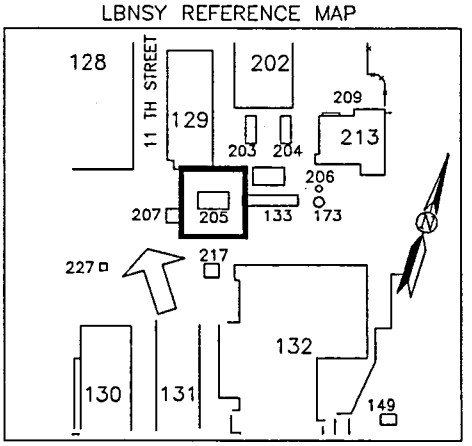
Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed Appendix L.
(e) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency



LBNSY REFERENCE MAP



LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
PT = PROCESS TANK
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= DRAINS
= BUILDING WALL
= BERM
= WATER FLOW DIRECTION

0 5 10 15 20 25
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 3 METAL CLEANING/PLATING SHOP BUILDING 205	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.67-1	GROUP B AREAS OF CONCERN	4.67-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.67-10 9

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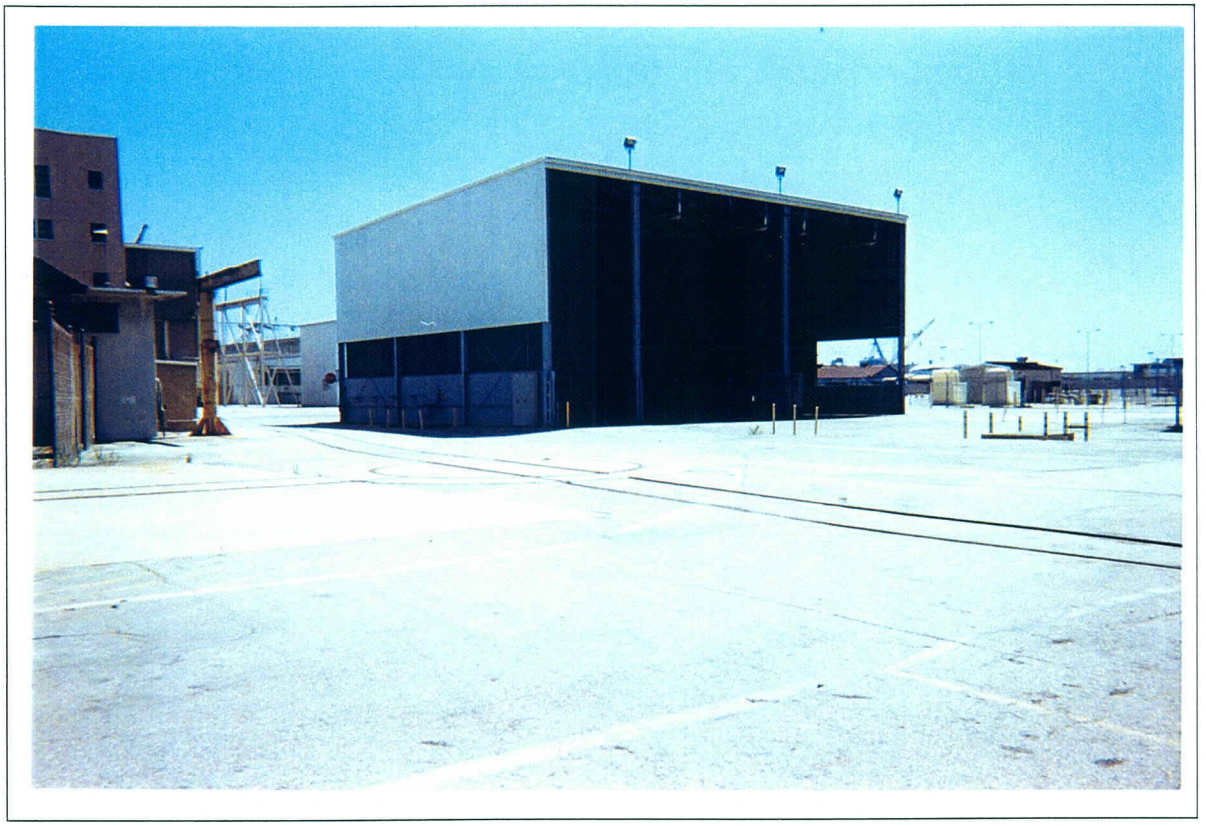
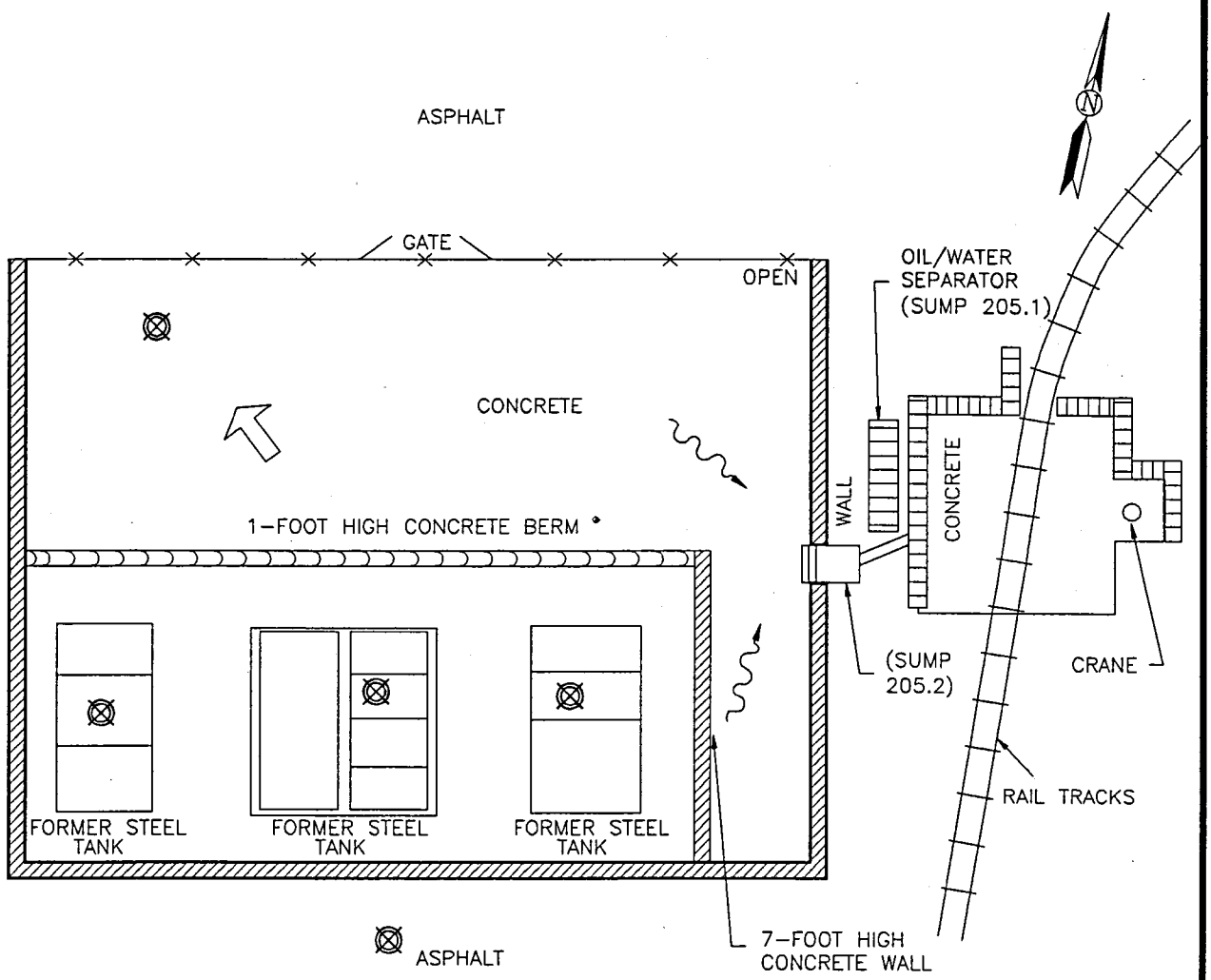
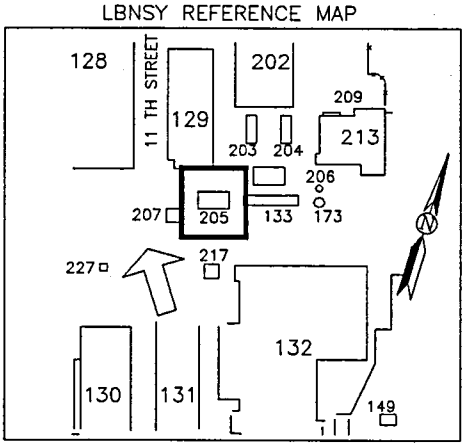


Figure 4.67-2 Building 205 (AOC PT 3), Facing Southwest 8/3/98

Figure 4.67-3 Bermed Area at Building 205 (AOC PT 3), Facing South 3/11/98



LBNSY REFERENCE MAP



LEGEND

AOC	= AREA OF CONCERN
LBNSY	= LONG BEACH NAVAL SHIPYARD
PT	= PROCESS TANK
⊗	= SOIL AND GROUNDWATER SAMPLING LOCATIONS
⇦	= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
	= DRAINS
	= BUILDING WALL
	= BERM
	= WATER FLOW DIRECTION

0 5 10 15 20 25
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.67-4

MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

SAMPLING LOCATIONS
AOC PT 3
METAL CLEANING/PLATING SHOP
BUILDING 205
GROUP B AREAS OF CONCERN

FIGURE
4.67-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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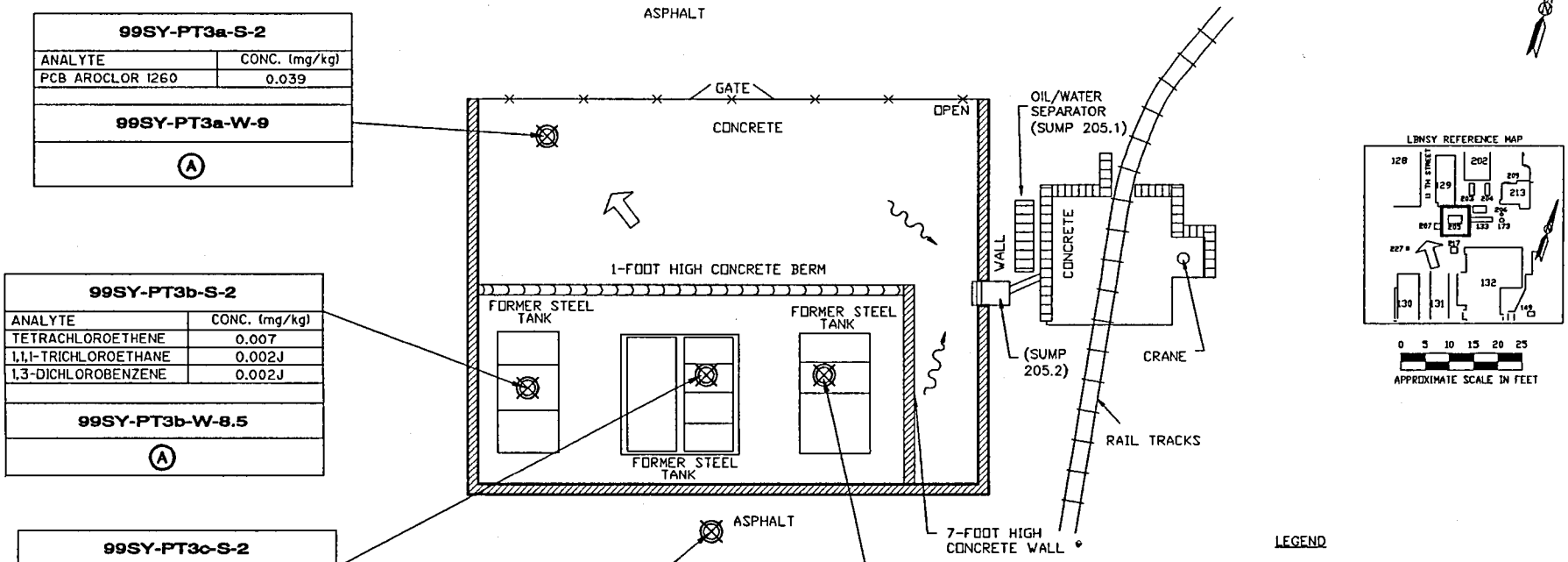

99SY-PT3a-S-2	
ANALYTE	CONC. (mg/kg)
PCB AROCLOR 1260	0.039
99SY-PT3a-W-9	
Ⓐ	

99SY-PT3b-S-2	
ANALYTE	CONC. (mg/kg)
TETRACHLOROETHENE	0.007
1,1,1-TRICHLOROETHANE	0.002J
1,3-DICHLOROBENZENE	0.002J
99SY-PT3b-W-8.5	
Ⓐ	

99SY-PT3c-S-2	
ANALYTE	CONC. (mg/kg)
TETRACHLOROETHENE	0.003J
99SY-PT3c-W-12	
Ⓐ	

99SY-PT3e-S-2	
ANALYTE	CONC. (mg/kg)
TPH-DIESEL	2J
TPH-MOTOR OIL	7J
99SY-PT3e-W-14.4	
ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.004J
BIS(2-ETHYLHEXYL)PHTHALATE	0.003J

99SY-PT3d-S-2	
ANALYTE	CONC. (mg/kg)
TPH-DIESEL	2J
TPH-MOTOR OIL	3J
PCB AROCLOR 1260	0.008J
99SY-PT3d-W-12	
ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.001J

LEGEND

LBNSY = LONG BEACH NAVAL SHIPYARD
MISC = MISCELLANEOUS
CONC. = CONCENTRATION
AOC = AREA OF CONCERN
PT = PROCESS TANK
PCB = POLYCHLORINATED BIPHENYL
BEHP = BIS(2-ETHYLHEXYL)PHTHALATE
⇦ = GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
⊗ = SOIL AND GROUNDWATER SAMPLING LOCATION
▥ = DRAINS
▨ = WALL
▭ = BERM
∿ = WATER FLOW DIRECTION
Ⓐ = NO ORGANICS DETECTED, AND NO METALS ABOVE SCREENING CRITERIA

NOTES: THIS FIGURE SHOWS ALL ORGANIC COMPOUND DETECTIONS. NO METALS EXCEEDED SCREENING CRITERIA.

ALL TANKS WERE UNDERGROUND STORAGE TANKS

99SY-PT3e-S-2= SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W= GROUNDWATER SAMPLE
WHERE 2= DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATION
MISC. = MISCELLANEOUS

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.67-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY FEBRUARY-MARCH 1999
AOC PT 3
METAL CLEANING/PLATING SHOP
BUILDING 205
GROUP B AREAS OF CONCERN

FIGURE
4.67-5

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

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4.68 VALVE CLEANING/PLATING SHOP, BUILDING 132 (AOC PT 4)

This section presents a description of the Building 132 Valve Cleaning/Plating Shop (AOC PT 4), its operational history and waste characteristics, PA resources used, and PA recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

A site map is shown in Figure 4.68-1, while a site photograph is shown in Figure 4.68-2.

4.68.1 Site Description

Table 4.68-1 summarizes the location and characteristics of AOC PT 4.

Table 4.68-1
AOC PT 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 4	Eastern side of Building 132, first floor.	I-32	Caustic cleaning and rinse tanks located inside of Building 132, with two ASTs and subsurface pipes, sumps, and clarifiers outside.	Nineteen aboveground process tanks, 2 ASTs, and an associated rinse area.	Each tank was approximately 500 gallons in capacity.

AOC = Area of Concern
AST = Aboveground Storage Tank
No. = Number
PT = Process Tank

During the March/April 1998 site reconnaissance, the concrete floor area inside the cleaning area in the eastern portion of Building 132 was inspected, and showed no signs of past cleaning tank operations. The concrete floor is reportedly as much as five feet thick because the former sunken floor that contained tanks was filled with concrete after the tanks were removed (Johnson, pers. comm. 1998). The area outside the eastern part of Building 132 was also inspected. The outside area was paved with asphalt that appeared to be cracked and repaired in several places. Two ASTs are no longer in use but still exist inside a concrete bermed area (see Figures 4.68-1 and 4.68-2) outside Building 132. Sumps that received wastes from the valve cleaning tanks via subsurface pipes still exist outside. Limited sampling has been performed outside of the eastern portion of Building 132 in association with a clarifier unit and the USTs (see Section 4.50 of this report).

4.68.2 Operational History and Waste Characteristics

Table 4.68-2 summarizes the operational history and waste characteristics of AOC PT 4.

Table 4.68-2
AOC PT 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Capacity
PT 4	Early 1960s to the late 1980s	Metal cleaning, especially valve cleaning. (Plating activity was possibly conducted for 1 to 2 months in the 1980s)	Cee Bee C-47, caustic solution, sequestering and wetting agents. Caustic and detergent residue.	500 to 750 gallons each tank. Sodium hydroxide AST, 4200 gallons Hydrochloric acid AST, 7500 gallons. Waste volume varied, maximum of 6000 gallons per year.

AOC = Area of Concern
AST = Aboveground Storage Tank
No. = Number
PT = Process Tank

AOC PT 4 consisted of ten cleaning and nine rinse tanks located in the eastern portion of Building 132 (NEESA 1983) as well as two ASTs (one for hydrochloric acid and one for sodium hydroxide) outside Building 132. Several LBNSY reports discuss cleaning operations outside of Building 132 from the 1960s to approximately the 1980s. It appears that the cleaning area was not covered by a roof until the 1980s, then this area was covered with a roof and became part of Building 132. The tanks were reportedly used for plating operations for only 1 to 2 months around 1983, then removed due to structural problems with the concrete and other safety concerns. It appears that the tanks used in 1983 were different than the tanks used prior to that year; the tanks used prior to 1983 represented a smaller scale operation.

Cleaning operations at Building 132 generated waste caustic cleaning solution and rinse water. There were two caustic tanks, each containing 500 gallons of 140 to 180 °F caustic solution, which were drained to a commercial tank truck monthly (CDM 1977). According to a 1983 NEESA report, the cleaning operations had been downsized to only one tank with an approximate capacity of 750 gallons that contained caustic solution and sequestering and wetting agents. These materials were emptied approximately every 2 to 3 months, and the contents were hauled away by Shop 72 personnel (NEESA 1983).

There was also a rinse area, located adjacent to the process tanks, used for cleaning motor blocks. Discharge water went to floor drains as described in Section 4.50.

The IWTP at LBNSY, built in the late 1980s, was initially designed to accept waste from the cleaning facility at Building 132. By 1990, the cleaning facility was closed and eventually dismantled (Kennedy/Jenks 1993). Wastes from the cleaning facility were never discharged to the IWTP.

4.68.3 Preliminary Assessment Resources

Table 4.68-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.68-3
AOC PT 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Sketch No. 8270	1963	LBNSY-PW	Proposed plan for building a shelter over the cleaning area.
Sketch No. 9514	1967	LBNSY-PW	Milcon P-083 Machine Shop Extension Drawing shows cleaning area and identifies 18 feet x 34 feet building to be removed at its location.
Environmental Engineering Survey	1977	CDM Inc.	Background information on waste generated at cleaning area in the east side of Building 132.
Drawing No. 6,102,939 (also labeled 24,245)	1978	LBNSY-PW	Milcon P-177 drawing of Pipe and Copper Shop Acid Tanks Drainage Plan showing 19 process tanks and 2 ASTs.
Figure 9	Unknown	A.L. Burke Engineers, Inc.	Figure 9, Titled "Plating Facilities Bldg. 132, East End", shows plating area outside.
Comprehensive Hazardous Waste Minimization Survey	1983	NEESA	Waste generation and general operations at Building 132.
Industrial Wastewater and Industrial Waste Treatment Plant Control and Management Plan	1993	Kennedy/Jenks	The cleaning operations were eliminated due to downsizing of the Naval Complex.
Personnel Interview	1998	Johnson, LBNSY	Recall cleaning operations inside the eastern part of Building 132.

AOC = Area of Concern
ASTs = Aboveground Storage Tanks
CDM = Camp, Dresser, & McKee
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PT = Process Tank

4.68.4 PA Recommendations

Based on PA findings, further action was recommended for AOC PT 4 because of the hazardous materials used and wastes used during the operations and the lack of information concerning operational management. Soil and groundwater sampling were recommended as described in the Work Plan (CDM Federal 1998a) to assess whether wastes may have impacted the soil and/or groundwater beneath the cleaning area. Soil and groundwater samples were planned for analysis for metals including hexavalent chromium, VOCs, cyanide, and pH.

4.68.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), four soil and three groundwater samples were collected. Soil and groundwater samples were collected for AOC PT 4 locations on 10 June 1998 at locations indicated in Figure 4.68-3. Samples were analyzed for the analytical categories indicated in Table 4.68-4. The soil samples were collected at depths of one foot bgs

because groundwater was near the ground surface in this area, except for one sampling location, where the soil sample was collected at six feet bgs (i.e., below the bottom of the former tanks). The groundwater samples were collected at 2, 3.5, and 12.1 feet bgs depending on the depth at which groundwater was first encountered at each sample location. It is not clear why groundwater was not encountered until 12.1 feet bgs at one location.

Table 4.68-4
AOC PT 4 Number of Samples and Analyses

Matrix	VOCs	Metals	Cr^{+6}	Cyanide	pH
Soil	4	4	4	4	4
Groundwater	3	3[(a)]	3	3	3

Notes:

(a) Dissolved Metals.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
PT = Process Tank
VOCs = Volatile Organic Compounds

4.68.6 Analytical Results

Analytical results for the AOC PT 4 soil and groundwater samples are presented in Tables 4.68-5 and 4.68-6, as well as in Figure 4.68-4.

4.68.6.1 Soil

As indicated in Table 4.68-5, there were no organic compounds detected in the four soil samples collected. Of the 17 other metals analyzed, 14 were detected in one or more soil samples, as indicated in Table 4.68-6. Cyanide and hexavalent chromium were not detected. The results for pH ranged from 8.82 to 9.07.

4.68.6.2 Groundwater

As indicated in Table 4.68-5, two VOCs (chloroform and toluene) were detected in the groundwater samples. Nine of seventeen metals were detected in the groundwater samples. Cyanide and hexavalent chromium were not detected. The results for pH ranged from 7.07 to 7.55.

4.68.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.68.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.68.9 Recommendations

No further action is recommended for AOC PT 4 because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.68-5
AOC PT 4 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Chloroform	4	0	ND	0.52	0	3	1	0.001J	0.130	0
Toluene	4	0	ND	520	0	3	1	0.0003J	85	0

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligram Per Kilogram
mg/L = Milligram Per Liter
ND = Not Detected
No. = Number
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound

Table 4.68-6
AOC PT 4 Sampling Results Summary for Inorganic Compounds
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above PRGs and Background**
Antimony	4	3	0.22J, 0.38J, 0.72J	750	11.3	0
Arsenic	4	4	3.5, 3.1, 4.4, 2.7	3.0	17.5	0
Barium	4	4	168J, 116, 72.3J, 61.5J	100,000	275	0
Beryllium	4	0	ND	3,400	1.4	0
Cadmium	4	3	0.29, 0.075J, 0.16J	930	1.7	0
Chromium	4	4	20.0 J, 14.4 J, 15.1 J, 12.0 J	450	60.9	0
Cobalt	4	4	8.7, 8.4, 6.2, 5.9	29,000	24.5	0
Copper	4	4	22.9 J, 12.9 J, 12.3 J, 8.4 J	70,000	798.7	0
Lead	4	4	5.9 J, 4.0 J, 4.8 J, 1.9 J	1,000	185.2	0
Mercury	4	3	0.033J, 0.033J, 0.031J	560	2.5	0
Molybdenum	4	2	0.86, 0.054J	9,400	NA	0
Nickel	4	4	21.4, 14.3, 13.4, 8.9	37,000	32.6	0
Selenium	4	2	0.28J, 0.42J	9,400	1.4	0
Silver	4	0	ND	9,400	1.5	0
Thallium	4	0	ND	150	4.2	0
Vanadium	4	4	25.8, 27.0, 22.6, 23.0	13,000	84.9	0
Zinc	4	4	46.8, 35.0, 30.8, 27.0	100,000	844.9	0
Cr^{+6}	4	0	ND	64	NA	0
Cyanide	4	0	ND	35	NA	0
pH	4	4	9.00, 9.03, 8.82, 9.07	NA	NA	0

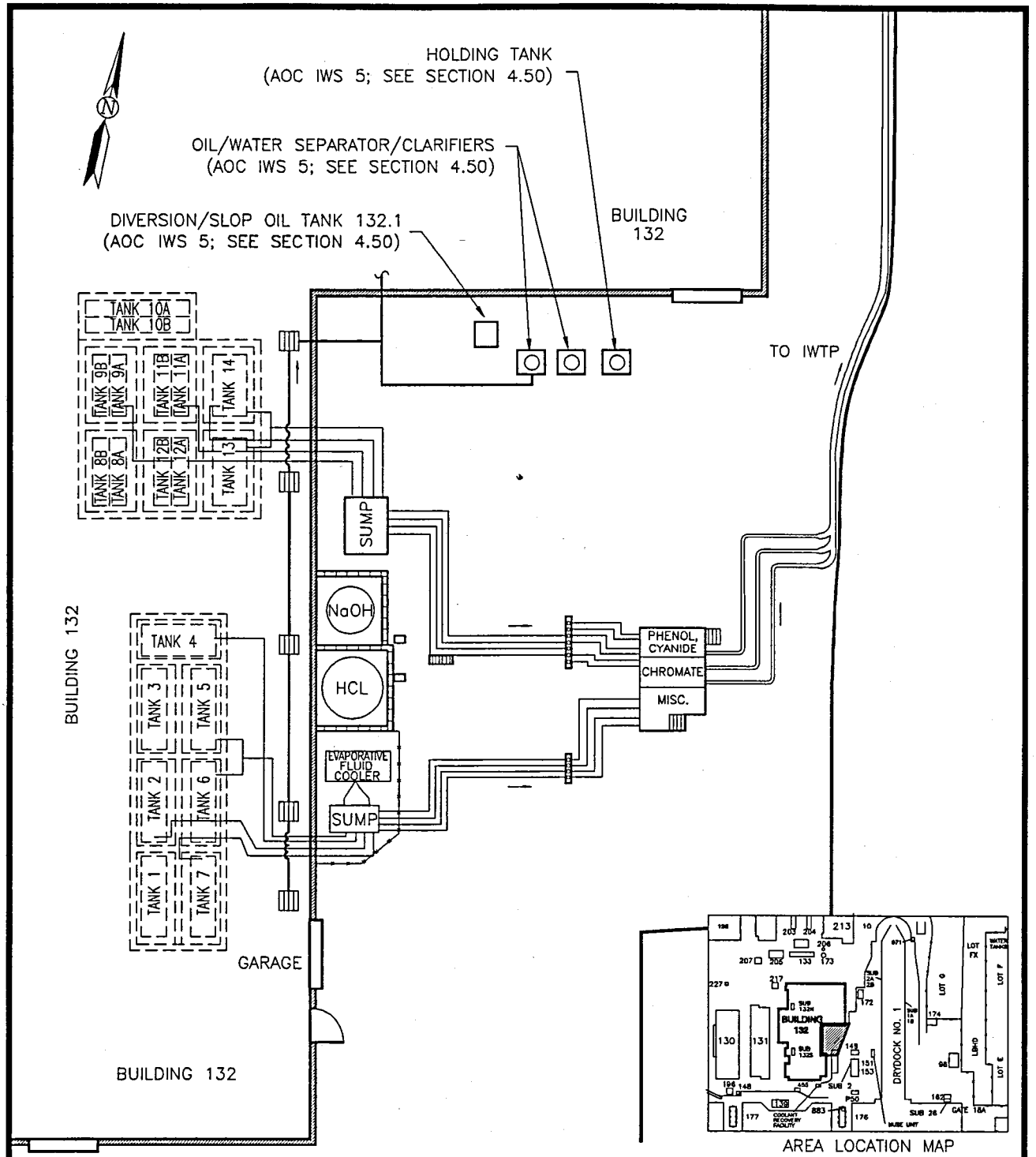
Table 4.68-6 (continued)
AOC PT 4 Sampling Results Summary for Inorganic Compounds
June 1998

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Screening Criteria and Background Levels**
Antimony	3	0	ND	1.2	0.0616	0
Arsenic	3	3	0.007, 0.0085, 0.0075	0.008	0.0276	0
Barium	3	3	0.0636 J, 0.0604 J, 0.0643 J	1[d]	0.1777	0
Beryllium	3	0	ND	0.000033	0.002	0
Cadmium	3	0	ND	0.001	0.0017	0
Chromium	3	3	0.0043J, 0.0044J, 0.0042J	190	0.28315	0
Cobalt	3	3	0.0067 J, 0.00054J. 0.0023J	2.2[d]	0.0071	0
Copper	3	3	0.0098J, 0.0083J, 0.0112	0.003	0.1072	0
Lead	3	0	ND	0.002	0.028	0
Mercury	3	0	ND	0.00004	0.0009	0
Molybdenum	3	3	0.0278 J, 0.0098 J, 0.0110 J	0.18[d]	NA	0
Nickel	3	3	0.0098 J, 0.0019J, 0.0027J	0.005	0.0958	0
Selenium	3	3	0.008J, 0.0081J, 0.0078J	0.015	0.040	0
Silver	3	0	ND	0.0007	0.0072	0
Thallium	3	1	0.0015J	0.014	0.0075	0
Vanadium	3	0	ND	0.26[d]	0.0107	0
Zinc	3	0	ND	0.02	0.291	0
Cr^{+6}	3	0	ND	0.002	NA	0
Cyanide	3	0	ND	0.001	NA	0
pH	3	3	7.07, 7.44, 7.55 (pH units)	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank



LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
PT = PROCESS TANK
HCL = HYDROCHLORIC ACID
NaOH = SODIUM HYDROXIDE
⋆—⋆—⋆—⋆ = CHAIN LINK FENCE

TANK 10A = TANKS REMOVED IN 1980s.
▥ = FLOOR DRAIN
IWTP = INDUSTRIAL WASTE TREATMENT PLANT
IWS = INDUSTRIAL WASTEWATER SYSTEM
UST = UNDERGROUND STORAGE TANK
MISC. = MISCELLANEOUS
— = DIRECTION OF FLOW

0 5 10 15 20 25
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 4 VALVE CLEANING/PLATING SHOP BUILDING 132 GROUP B AREAS OF CONCERN	FIGURE 4.68-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.68-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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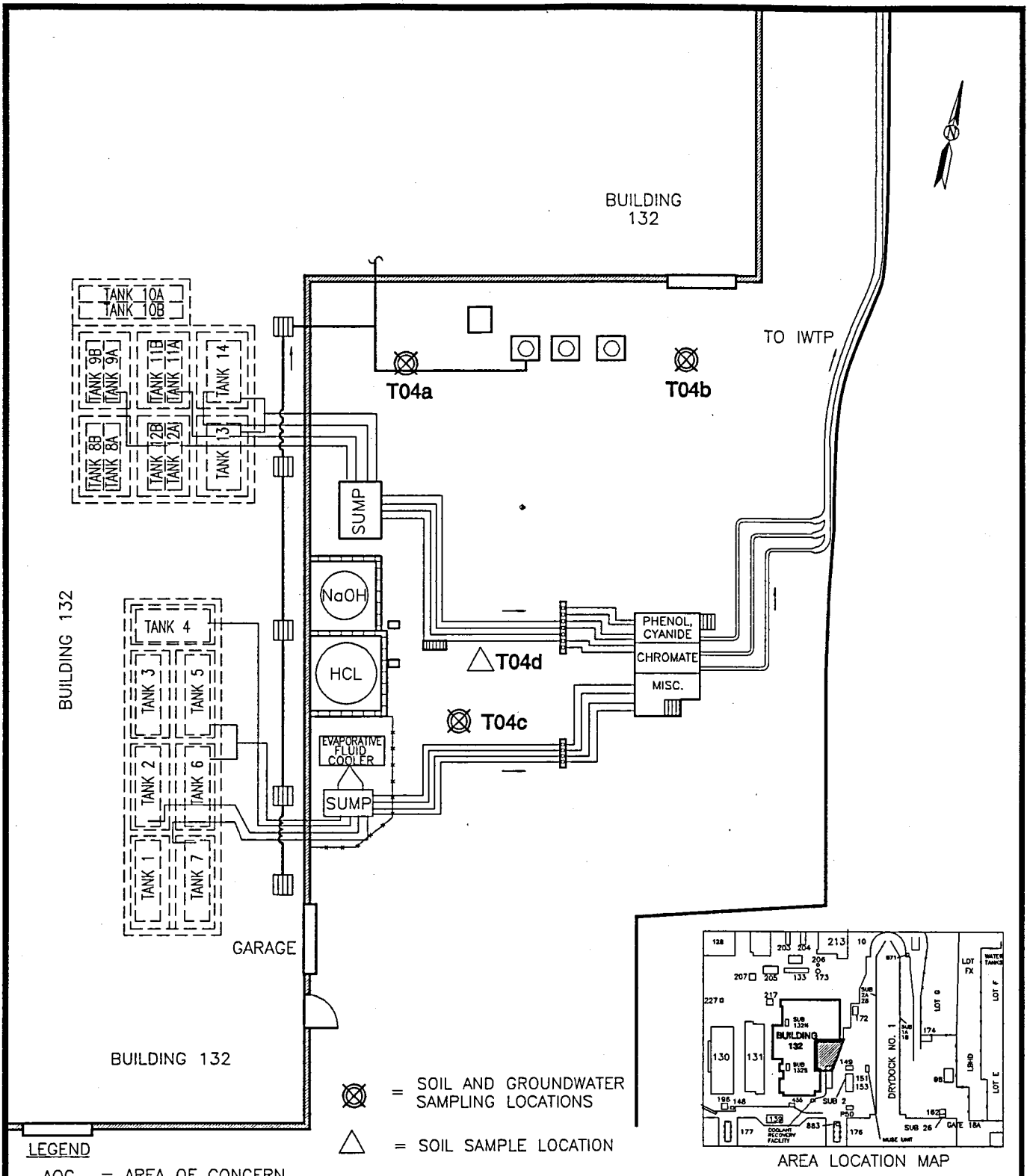
Figure 4.68-2 Outside Former Valve Cleaning Shop (AOC PT 4), Building 132, Facing West 12/14/98



LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
PT = PROCESS TANK
HCL = HYDROCHLORIC ACID
NaOH = SODIUM HYDROXIDE
-x-x-x- = CHAIN LINK FENCE
—→ = DIRECTION OF FLOW

TANK 10A = TANKS REMOVED IN 1980s.
= FLOOR DRAIN
IWTP = INDUSTRIAL WASTE TREATMENT PLANT
IWS = INDUSTRIAL WASTEWATER SYSTEM
UST = UNDERGROUND STORAGE TANK
MISC. = MISCELLANEOUS

0 5 10 15 20 25
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99
FN: 4.68-4
MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

SAMPLING LOCATIONS
AOC PT 4
VALVE CLEANING/PLATING SHOP
BUILDING 132
GROUP B AREAS OF CONCERN

FIGURE
4.68-3

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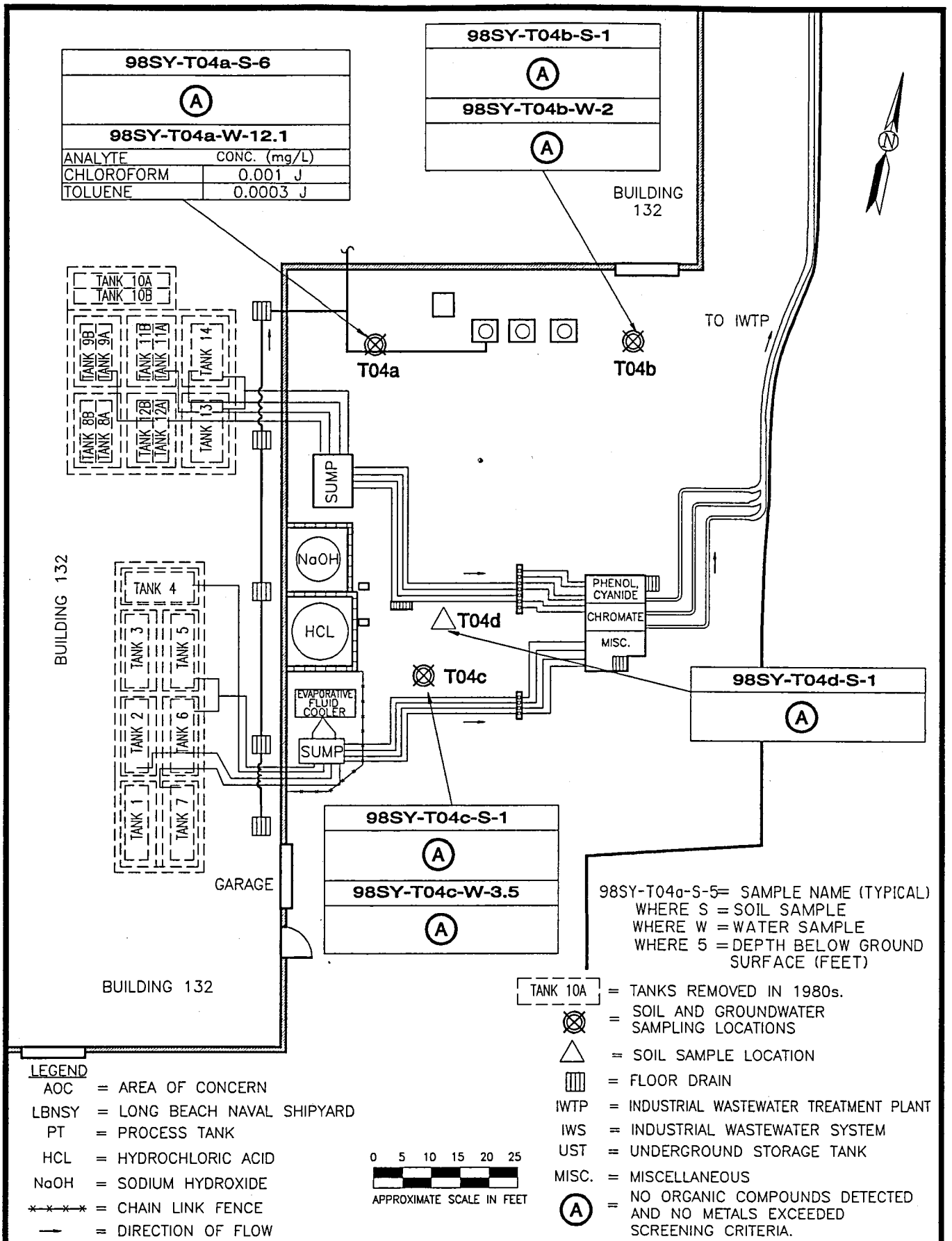

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.68-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC PT 4
VALVE CLEANING/PLATING SHOP BUILDING 132
GROUP B AREAS OF CONCERN

FIGURE
4.68-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.68-12

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4.69 PLATING SHOP, BUILDING 132 SECOND FLOOR (AOC PT 5)

This section presents a description of the Building 132 Plating Shop (AOC PT 5), its operational history and waste characteristics, PA resources used, and recommendations. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.69.1 Site Description

Table 4.69-1 summarizes the location and characteristics of AOC PT 5. A site map is shown as Figure 4.69-1. Site photographs are shown in Figures 4.69-2 through 4.69-4.

Table 4.69-1
AOC PT 5 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 5	Second floor (fourth story) of Building 132, western side.	I-31	Aboveground plating tanks used in association with Building 132 operations.	Seven process tanks and four rinse tanks.	Six process tanks: 600-gallon capacity each. One process tank: 1,200-gallon capacity. Four rinse tanks: 660-gallon capacity each.

AOC = Area of Concern No. = Number PT = Process Tank

AOC PT 5 consists of a plating shop located on the second floor (fourth story) of Building 132. During the March/April 1998 site reconnaissance, seven process tanks and four associated rinse tanks were observed. The tanks were located above the floor surface and were surrounded by a 6-inch high concrete berm. The surface inside the berm was slightly stained in some areas. The surrounding floor outside the berm, also concrete, appeared to be in good condition.

Five 4-inch diameter PVC pipes connect from the plating shop on the second floor to near the ground surface outside the western side of Building 132 about 150 feet to the south (see Figure 4.69-4). These pipes appear to have been used to pump new plating solutions from a truck at the ground surface up to the plating shops, or possibly to discharge waste solutions.

Three PVC pipelines used to discharge plating wastes to the IWTP lead from the plating shop to the eastern side of Building 132. These pipes are visible on the first floor roof and along a vehicle ramp east of Building 132. These pipes were likely installed around 1986 when the IWTP was built.

4.69.2 Operational History and Waste Characteristics

Table 4.69-2 summarizes the operational history and waste characteristics of AOC PT 5.

Table 4.69-2
AOC PT 5 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 5	1978 to mid-1990s	Cleaning large metal parts and valves using corrosive substances, then plating them.	1,1,1-TCA, caustic cleaner, muriatic acid, chromic acid, microbright acid solution, and alkali.	Unknown.

AOC = Area of Concern
No. = Number
PT = Process Tank
TCA = Trichloroethane

According to a 1983 Initial Assessment Study performed by NEESA, AOC PT 5 operations were initiated on the second floor of Building 132 around 1978. Operations consisted of six process tanks (660-gallon capacity each) that contained 1,1,1-trichloroethane (TCA), caustic soda, muriatic (i.e., hydrochloric) acid, chromic acid, microbright acid solution, and alkali cleaner. The contents of each of these tanks, except the microbright dip and alkali cleaner tanks, were drained into a tank and transported offsite by an outside contractor every 3 to 18 months. The tanks containing microbright dip and alkali cleaner tanks were reportedly not drained, but solution was added periodically to maintain full volume. One process tank (1,200-gallon capacity) was used to contain acid paint stripping solution and was drained to a tank for transport offsite by an outside contractor whenever disposal was necessary. The four rinse tanks (660-gallon capacity each) were drained continuously into the sanitary sewer (NEESA 1983) until the late 1980s, when the rinse tanks were drained to the IWTP via pipes at locations identified in Figures 4.69-1 and 4.69-5.

4.69.3 Preliminary Assessment Resources

Table 4.69-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.69-3
AOC PT 5 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Comprehensive Hazardous Waste Minimization Survey	1983	NEESA	AOC PT 5 tank capacities and hazardous materials used.
Industrial Wastewater and Industrial Waste Treatment Plant Control and Management Plan	1993	Kennedy/Jenks	Connection of AOC PT 5 tanks to IWTP line.
Personnel Interviews	1998	Johnson, Nunn, LBNSY	General AOC PT 5 information

AOC = Area of Concern
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PT = Process Tank

4.69.4 PA Recommendations

Based on PA findings, further action was recommended for AOC PT 5. These tanks are located on the second floor of Building 132, so soil does not exist directly beneath the floor. However, piping along the outside of Building 132 at the ground surface exists. The piping was likely used to pump plating operation chemicals from trucks to the second floor plating shop and possibly to pump waste chemicals for offsite transport and/or sanitary sewer disposal until the late 1980s, when the waste solutions were piped to the IWTP. Soil and groundwater sampling was recommended to assess whether wastes may have impacted the soil and/or groundwater from leaks or spills during activities involving connecting the pipes to trucks south of the plating shop. The soil and groundwater samples collected at this location were recommended for analysis for metals including hexavalent chromium, VOCs, cyanide, and pH (CDM Federal 1998a).

4.69.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), one soil and one groundwater sample were collected. Samples were collected on 17 June 1998 and analyzed for the analytical categories indicated in Table 4.69-4. The soil sample was collected at a depth of one foot below ground surface and the groundwater sample was collected at seven feet bgs.

Sampling locations are indicated in Figure 4.69-5.

Table 4.69-4
AOC PT 5 Number of Samples and Analyses

Matrix	VOCs	Metals	Cr^{+6}	Cyanide	pH
Soil	1	1	1	1	1
Groundwater	1	1[(a)]	1	1	1

Notes:
(a) Dissolved Metals.
AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
PT = Process Tank
VOCs = Volatile Organic Compounds

4.69.6 Analytical Results

Analytical results for the AOC PT 5 soil and groundwater samples are summarized in Tables 4.69-5 and 4.69-6, as well as in Figure 4.69-6.

4.69.6.1 Soil

There were no organic compounds, cyanide, or hexavalent chromium detected in the soil sample. Ten of seventeen metals were detected and the pH was 8.10.

4.69.6.2 Groundwater

Cyanide and hexavalent chromium were not detected in the groundwater sample. The only VOC detected was chloroform, at 0.0005 J mg/L. The four metals detected were arsenic, barium, copper, and selenium. The pH result was 7.37.

4.69.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.69.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.69.9 Recommendations

No further action is recommended for AOC PT 5 because samples were collected but no analytes exceeded their respective screening criteria.

Table 4.69-5
AOC PT 5 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above PRG**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Chloroform	1	0	ND	0.52	0	1	1	0.0005J	0.130	0

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound

Table 4.69-6
AOC PT 5 Sampling Results Summary for Inorganic Compounds
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above PRGs and Background**
Antimony	1	0	ND	750	11.3	0
Arsenic	1	1	3.9	3.0	17.5	0
Barium	1	1	118	100,000	275	0
Beryllium	1	0	ND	3,400	1.4	0
Cadmium	1	0	ND	930	1.7	0
Chromium	1	1	10	450	60.9	0
Cobalt	1	1	8.4	29,000	24.5	0
Copper	1	1	22.2	70,000	798.7	0
Lead	1	1	4.8	1,000	185.2	0
Mercury	1	1	0.045J	560	2.5	0
Molybdenum	1	0	ND	9,400	NA	0
Nickel	1	1	9.1J	37,000	32.6	0
Selenium	1	0	ND	9,400	1.4	0
Silver	1	0	ND	9,400	1.5	0
Thallium	1	0	ND	150	4.2	0
Vanadium	1	1	27.1	13,000	84.9	0
Zinc	1	1	44.8	100,000	844.9	0
Cr^{+6}	1	0	ND	64	NA	0
Cyanide	1	0	ND	35	NA	0
pH	1	1	8.10 (pH units)	NA	NA	0

Table 4.69-6 (continued)
AOC PT 5 Sampling Results Summary for Inorganic Compounds
June 1998

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[f] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Screening and Background Criteria**
Antimony	1	0	ND	1.2	0.0616	0
Arsenic	1	1	0.0088	0.008	0.0276	0
Barium	1	1	0.0616	1[d]	0.1777	0
Beryllium	1	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	1	0	ND	0.001	0.0017	0
Chromium	1	0	ND	190	0.28315	0
Cobalt	1	0	ND	2.2[d]	0.0071	0
Copper	1	1	0.0089J	0.003	0.1072	0
Lead	1	0	ND	0.002	0.028	0
Mercury	1	0	ND	0.00004	0.0009	0
Molybdenum	1	0	ND	0.18[d]	NA	0
Nickel	1	0	ND	0.005	0.0958	0
Selenium	1	1	0.0041J	0.015	0.040	0
Silver	1	0	ND	0.0007	0.0072	0
Thallium	1	0	ND	0.014	0.0075	0
Vanadium	1	0	ND	0.26[d]	0.0107	0
Zinc	1	0	ND	0.02	0.291	0
Cr^{+6}	1	0	ND	0.002	NA	0
Cyanide	1	0	ND	0.01	NA	0
pH	1	1	7.37 (pH units)	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
mg/kg = Milligram Per Kilogram
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency

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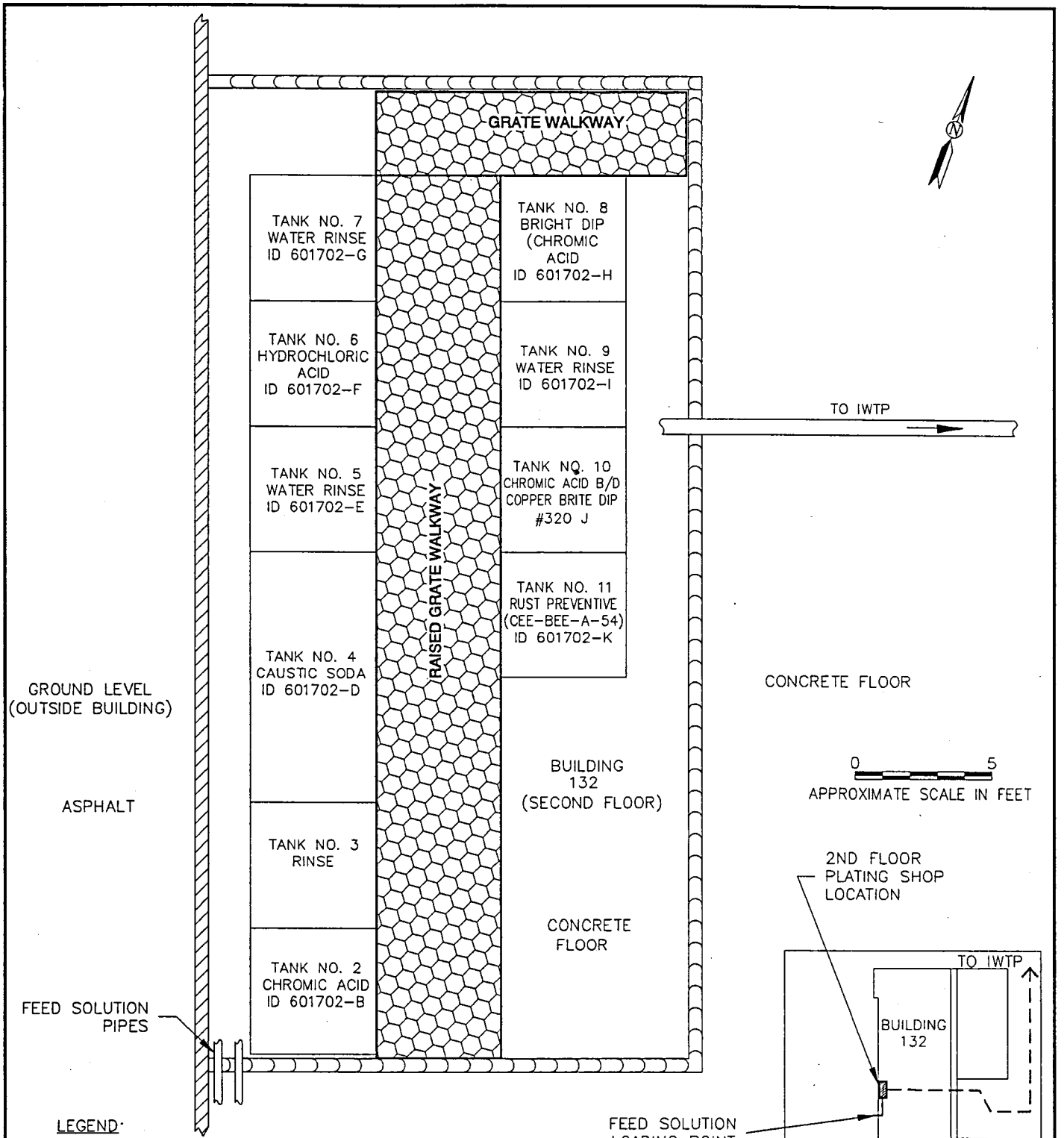

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 5 PLATING SHOP BUILDING 132, SECOND FLOOR	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.69-1		4.69-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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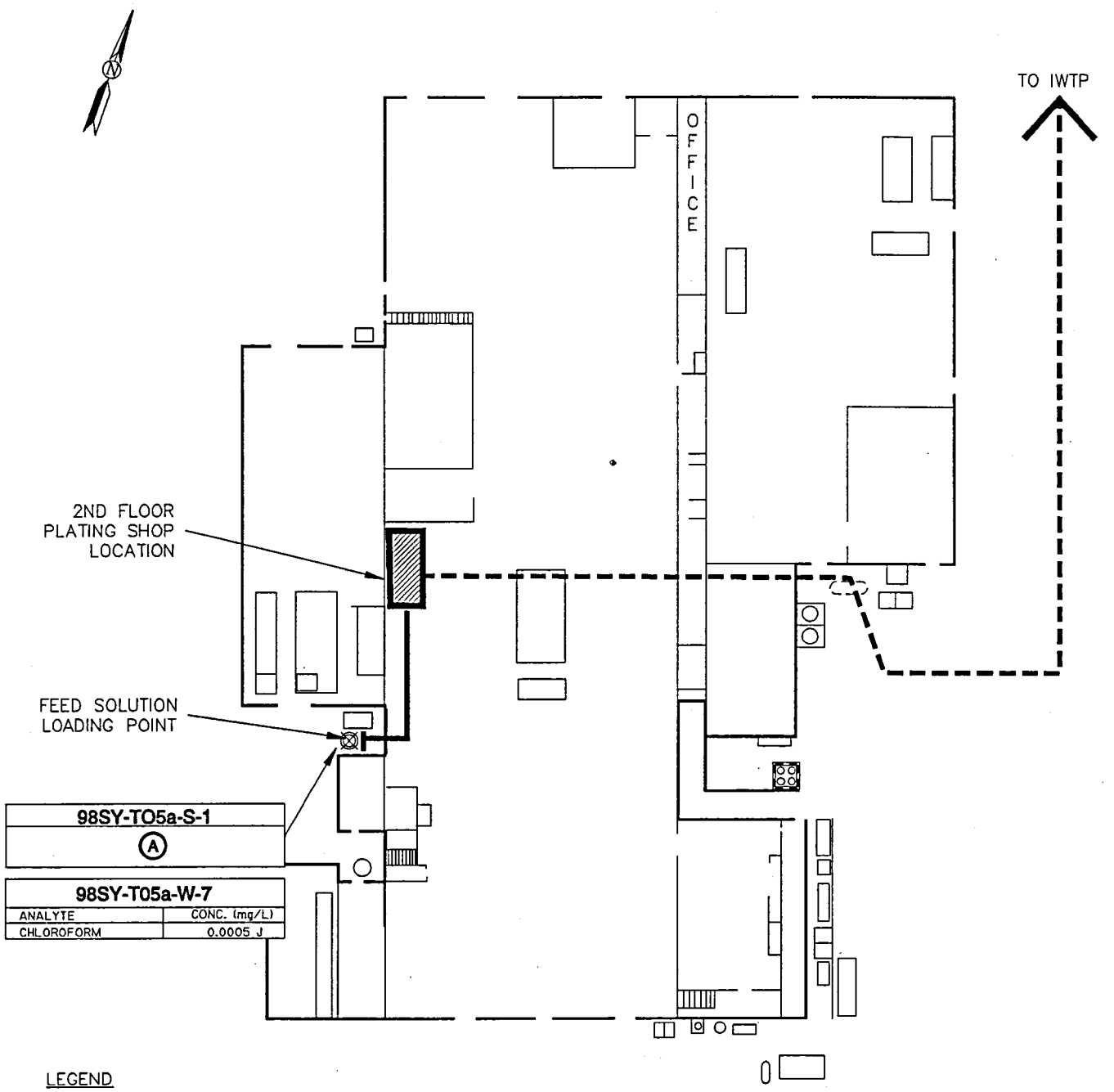
Figure 4.69-2 Pipes Leading to the Second Floor Dip Tanks at Building 132 (AOC PT 5)2/12/98
Facing Northwest

Figure 4.69-3 Second Floor Dip Tanks at Building 132 (AOC PT 5) 12/14/98
Facing Southwest

Figure 4.69-4 Piping Outside of Second Floor Process Tanks, Building 132, Facing East (AOC PT 5) 2/12/98



LEGEND

AOC = AREA OF CONCERN
IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT
PT = PROCESS TANK
NO. = NUMBER
ID = IDENTIFICATION
= WALL SECTION
= CONCRETE BERM
= SOIL AND GROUND SAMPLE LOCATION
= WASTEWATER LINE TO IWTP

98SY-T05a-S-1=SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 1 = DEPTH BELOW GROUND SURFACE (FEET)
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION
(A) = NO ORGANICS DETECTED, AND NO METALS ABOVE SCREENING CRITERIA.

NOTE: THIS FIGURE SHOWS ORGANIC COMPOUNDS DETECTED. NO METALS EXCEEDED SCREENING CRITERIA.

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING RESULTS SUMMARY, JUNE 1998 AOC PT 5 PLATING SHOP BUILDING 132, SECOND FLOOR GROUP B AREAS OF CONCERN	FIGURE 4.69-5
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.69-5		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.70 SHEET METAL CLEANING/PLATING SHOP, BUILDING 130 (AOC PT 6)

This section presents a description of the Building 130 Sheet Metal Cleaning/Plating Shop (AOC PT 6), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.70.1 Site Description

Table 4.70-1 summarizes the location and characteristics of AOC PT 6. A site map is provided as Figure 4.70-1. Site photographs are shown in Figures 4.70-2 and Figure 4.70-3.

Table 4.70-1
AOC PT 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 6	Inside southeastern side of Building 130.	J-29, J-30	Five process dip tanks in a bermed room inside Building 130.	Five process dip tanks.	- 800 gallon caustic dip tank - 800 gallon rinse tank - 800 gallon desmutter tank - 400 gallon degreaser tank - 200 gallon chromic acid tank

AOC = Area of Concern No. = Number PT = Process Tank

AOC PT 6 consists of five aboveground process dip tanks located in a room in the southeastern part of Building 130. The tanks were inspected as part of the March 1998 site reconnaissance. These tanks, located on a concrete floor, are surrounded by concrete walls on three sides and a berm on the southern side. The floor surface is severely corroded with a floor drain located in the middle of the room. This floor drain, which connects to the LBNSY sanitary sewer system, was used to drain the rinse tank and the process tanks.

4.70.2 Operational History and Waste Characteristics

Table 4.70-2 summarizes the operational history and waste characteristics of AOC PT 6.

Table 4.70-2
AOC PT 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 6	1942 to 1980s	Sheet metal cleaning		
		1 caustic dip tank for aluminum stripping	Kelite Alsite-alkaline aluminum etchant (temp. 200°F).	Unknown.
		1 desmutter tank	Kelite 814-aluminum desmutter acid, containing potassium dichromate.	Unknown.
		1 degreasing tank	Degreaser solvent (specific type unknown).	Unknown.
		1 chromic acid tank	Cee Bee, Konverkote No. 1 chromic acid, containing hexavalent chromium.	Unknown.
		1 rinse tank	Residue from dip tanks.	Unknown.

AOC = Area of Concern No. = Number PT = Process Tank

The five process dip tanks in Building 130 contained caustic solutions including stripping agents, desmutting solutions, degreaser solvents, chromic acid, and rinse water.

The 800-gallon caustic dip tank, used for aluminum stripping, was installed in 1942 and used along with the 800-gallon rinse tank (NEESA 1983). Between 1969 and 1976, the 400-gallon degreaser tank, 800-gallon desmutter tank, and the 200-gallon chromic acid tank were installed as part of improvements to the sheet metal cleaning operations at Building 130 (NEESA 1983). The five process tanks generated various wastes including caustic solution, aluminum etchant agents, desmutter acid, degreaser solvent, chromic acid, and wastewater from the rinse tank.

Disposal methods for the dip tank wastes varied over the operational life of the shop. The caustic dip tank waste was reportedly sent to the Navy mole for disposal at the waste disposal pits (Brown and Caldwell 1969) now designated as IR Site 3 (BNI 1997a). Starting in 1972, disposal of the caustic dip tank wastes was achieved by outside contractors on an annual basis. An outside contractor also cleaned out the degreaser tank on an annual basis. The desmutter and chromic acid tanks were refilled with acid periodically and cleaned out by an outside contractor every 3 to 5 years. The rinse tank continually overflowed into the sanitary sewer system through the floor drain in the plating shop (Brown and Caldwell 1969).

The time period that the sheet metal cleaning shop was closed is uncertain, but the shop is not mentioned in industrial waste documents prepared for the LBNSY in the early 1990s.

4.70.3 Preliminary Assessment Resources

Table 4.70-3 presents the PA resources and interviews used to evaluate this AOC.

Table 4.70-3
AOC PT 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Study	1969	Brown and Caldwell	AOC PT 6 tank volumes, specific chemicals used, and disposal information.
Environmental Engineering Survey	1977	CDM, Inc.	AOC PT 6 tank volumes, specific chemicals used, and disposal information.
Initial Assessment Study	1983	NEESA	AOC PT 6 tank specifics, wastes, and cleaning process information.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	AOC PT 6 not mentioned.
Industrial Wastewater and Industrial Waste Treatment Plant Control	1993	Kennedy/Jenks	AOC PT 6 not mentioned.
Personnel Interview	1998	Johnson and Nunn LBNSY-ED	General AOC PT 6 information.

AOC = Area of Concern
CDM Inc. = Camp, Dresser, & McKee Inc.
LBNSY-ED = Long Beach Naval Shipyard, Environmental Department
NEESA = Naval Energy and Environmental Support Activity
PT = Process Tank

4.70.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PT 6 because of the types of hazardous materials handled during operations and evidence of spills on the floor of the sheet metal cleaning shop. Soil and groundwater sampling were recommended in the Work Plan to assess whether wastes may have impacted the soil and/or groundwater beneath the shop. Soil and groundwater samples were recommended for analysis of metals including hexavalent chromium, VOCs, cyanide, and pH (CDM Federal 1998a).

4.70.5 Number of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), four soil and three groundwater samples were collected. Soil and groundwater samples were collected for AOC PT 6 locations on 10 June and 16 June 1998. Samples were analyzed for the analytical categories indicated in Table 4.70-4. Soil samples were collected at a depth of five feet bgs (i.e., one foot below the bottom of the tanks). Groundwater samples were collected at 7, 8.2, and 12 feet below ground surface, depending on the depth at which groundwater was encountered at each sampling location.

Figure 4.70-4 shows the sampling locations.

Table 4.70-4
AOC PT 6 Number of Samples and Analyses

Matrix	VOCs	Metals	Cr^{+6}	Cyanide	pH
Soil	4	4	4	4	4
Groundwater	3	3[(a)]	3	3	3

Notes:
(a) Dissolved Metals
AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
PT = Process Tank
VOCs = Volatile Organic Compounds

4.70.6 Analytical Results

Analytical results for the AOC PT 6 soil and groundwater samples are presented in Tables 4.70-5 and 4.70-6. Figure 4.70-5 summarizes the sampling results.

4.70.6.1 Soil

As indicated on Table 4.70-5, no organic compounds were detected in any of the four soil samples collected. Fourteen of 17 metals were detected at AOC PT 6. The pH results ranged from 8.93 to 9.15.

4.70.6.2 Groundwater

The only VOC detected in the groundwater samples was 1,2,3-trichlorobenzene. No SVOCs, cyanide, or hexavalent chromium were detected. Eight of the 17 metals were detected at AOC PT 6, while the pH results ranged from 7.20 to 7.47.

4.70.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.70.8 Data Validation and Screening Criteria

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.70.9 Recommendations

No further action is recommended for AOC PT 6 because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.70-5
AOC PT 6 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	No. of Detections above Criteria	No. of Samples	No. of Detections	Concentration (mg/L)	Screening Criteria for Water[b] (mg/L)	No. of Detections above Criteria
VOCs (60 analytes)[c]										
1,2,3-Trichlorobenzene	4	0	ND	N/A	0	3	1	0.0004J	NA	0

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
VOCs = Volatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency

Table 4.70-6
AOC PT 6 Sampling Results Summary for Inorganic Compounds
June 1998

SOIL						
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Criteria
Antimony	4	2	0.44J, 0.18J	750	11.3	0
Arsenic	4	4	3.1, 2.4, 4.6, 3.0	3.0	17.5	0
Barium	4	4	52.5J, 55.4J, 150, 65.2	100,000	275	0
Beryllium	4	0	ND	3,400	1.4	0
Cadmium	4	1	0.013J	930	1.7	0
Chromium	4	4	11.6J, 13.3J, 24.8J, 13.9	450	60.9	0
Cobalt	4	4	5.4, 5.8, 15.3J, 7.7	29,000	24.5	0
Copper	4	4	7.2J, 9.6J, 25.3, 13.3	70,000	798.7	0
Lead	4	4	2.8J, 3.3J, 7.4J, 4.0	1,000	185.2	0
Mercury	4	3	0.025J, 0.078J, 0.078J	560	2.5	0
Molybdenum	4	2	0.088J, 0.19J	9,400	NA	0
Nickel	4	4	7.8, 9.7, 20.9, 10.6	37,000	32.6	0
Selenium	4	1	0.37J	9,400	1.4	0
Silver	4	0	ND	9,400	1.5	0
Thallium	4	0	ND	150	4.2	0
Vanadium	4	4	22.7, 21.1, 47.9, 27.6	13,000	84.9	0
Zinc	4	4	27.0, 29.0, 82.3J, 42.7J	100,000	844.9	0
Cr^{+6}	4	0	ND	64	NA	0
Cyanide	4	0	ND	35[c]	NA	0
pH	4	4	8.93 to 9.15	NA	NA	0

Table 4.70-6 (continued)
AOC PT 6 Sampling Results Summary for Inorganic Compounds
June 1998

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	3	0	ND	1.2	0.0616	0
Arsenic	3	3	0.0061, 0.0048J, 0.0061	0.008	0.0276	0
Barium	3	3	0.0606J, 0.0586J, 0.116	1[d]	0.1777	0
Beryllium	3	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	3	0	ND	0.001	0.0017	0
Chromium	3	2	0.0047J, 0.0039J	190	0.0029	0
Cobalt	3	2	0.0014J, 0.0015J	2.2[d]	0.0071	0
Copper	3	2	0.0077J, 0.0080J	0.003	0.1072	0
Lead	3	0	ND	0.002	0.028	0
Mercury	3	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	3	2	0.0070J, 0.0062J	0.18[d]	NA	0
Nickel	3	2	0.0020J, 0.0011J	0.005	0.0958	0
Selenium	3	3	0.0070J, 0.0081J, 0.0053J	0.015	0.040	0
Silver	3	0	ND	0.0007	0.0072	0
Thallium	3	0	ND	0.014	0.0075	0
Vanadium	3	0	ND	0.26[d]	0.0107	0
Zinc	3	0	ND	0.020	0.291	0
Cr^{+6}	3	0	ND	0.002	NA	0
Cyanide	3	0	ND	0.01	NA	0
pH	3	3	7.20 to 7.47	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency

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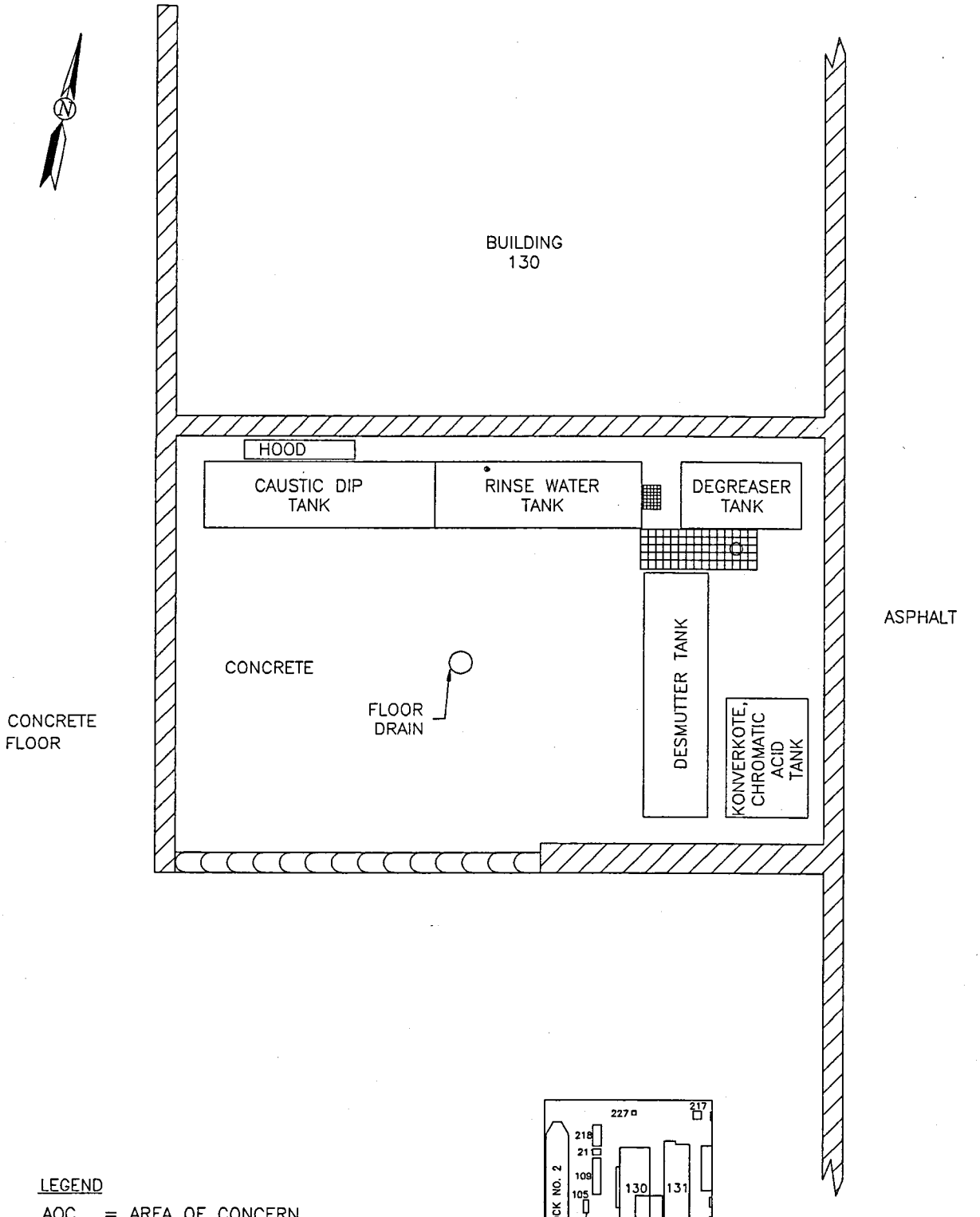

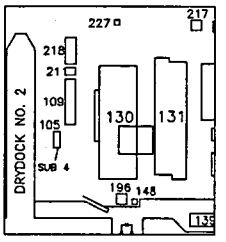

AREA LOCATION MAP

LEGEND

AOC = AREA OF CONCERN

PT = PROCESS TANK

= BUILDING WALL

= BERM

0 5 10

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 6 SHEET METAL CLEANING/PLATING SHOP BUILDING 130 EAST GROUP B AREAS OF CONCERN	FIGURE 4.70-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.70-1	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157	

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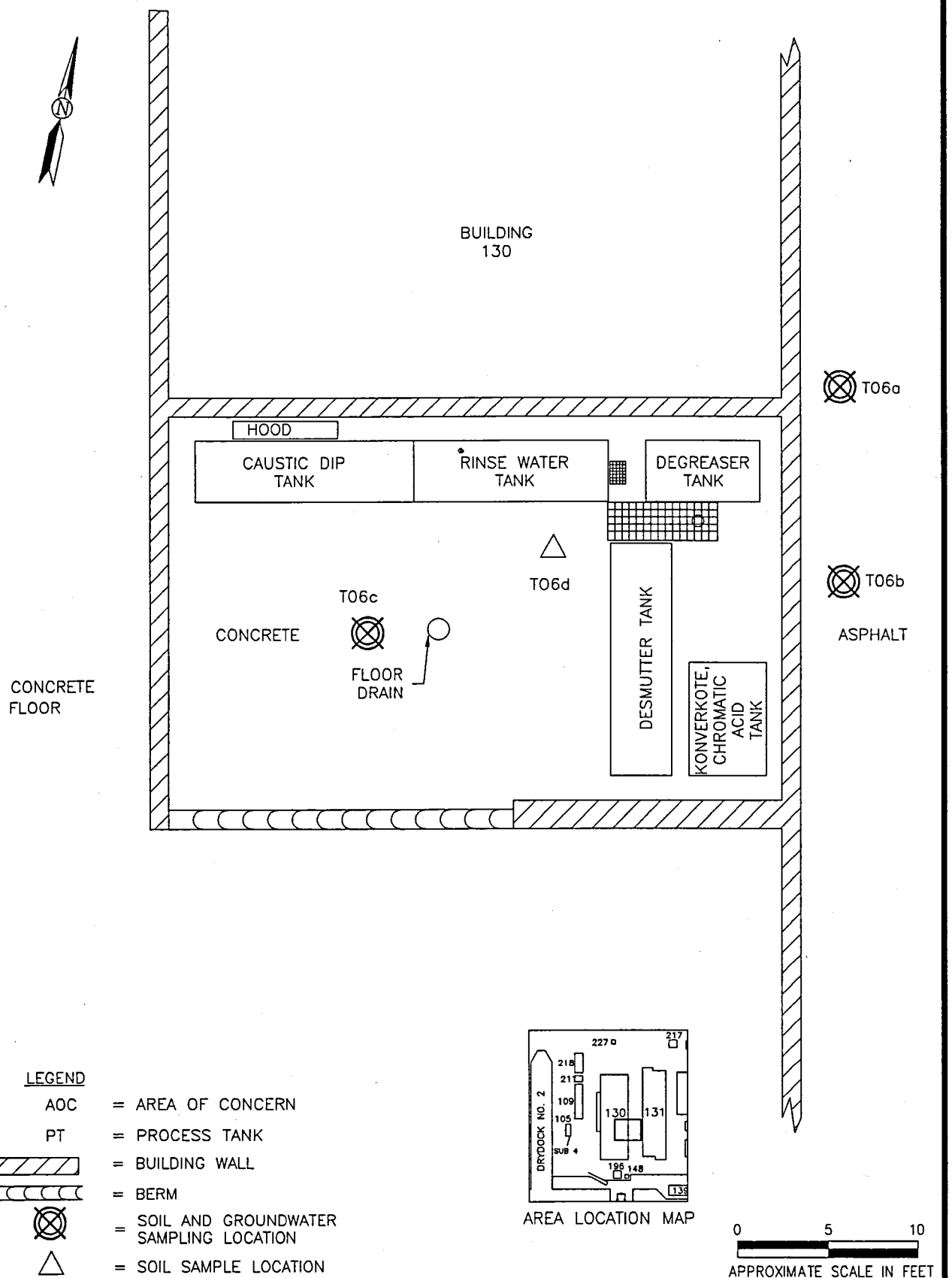
Figure 4.70-2 Building 130 Process Tanks (AOC PT 6), Facing Northeast 12/14/98

Figure 4.70-3 Building 130 Process Tanks (AOC PT 6), Facing West 12/14/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AOC PT 6 SHEET METAL CLEANING/PLATING SHOP BUILDING 130 EAST GROUP B AREAS OF CONCERN	FIGURE 4.70-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.70-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157		

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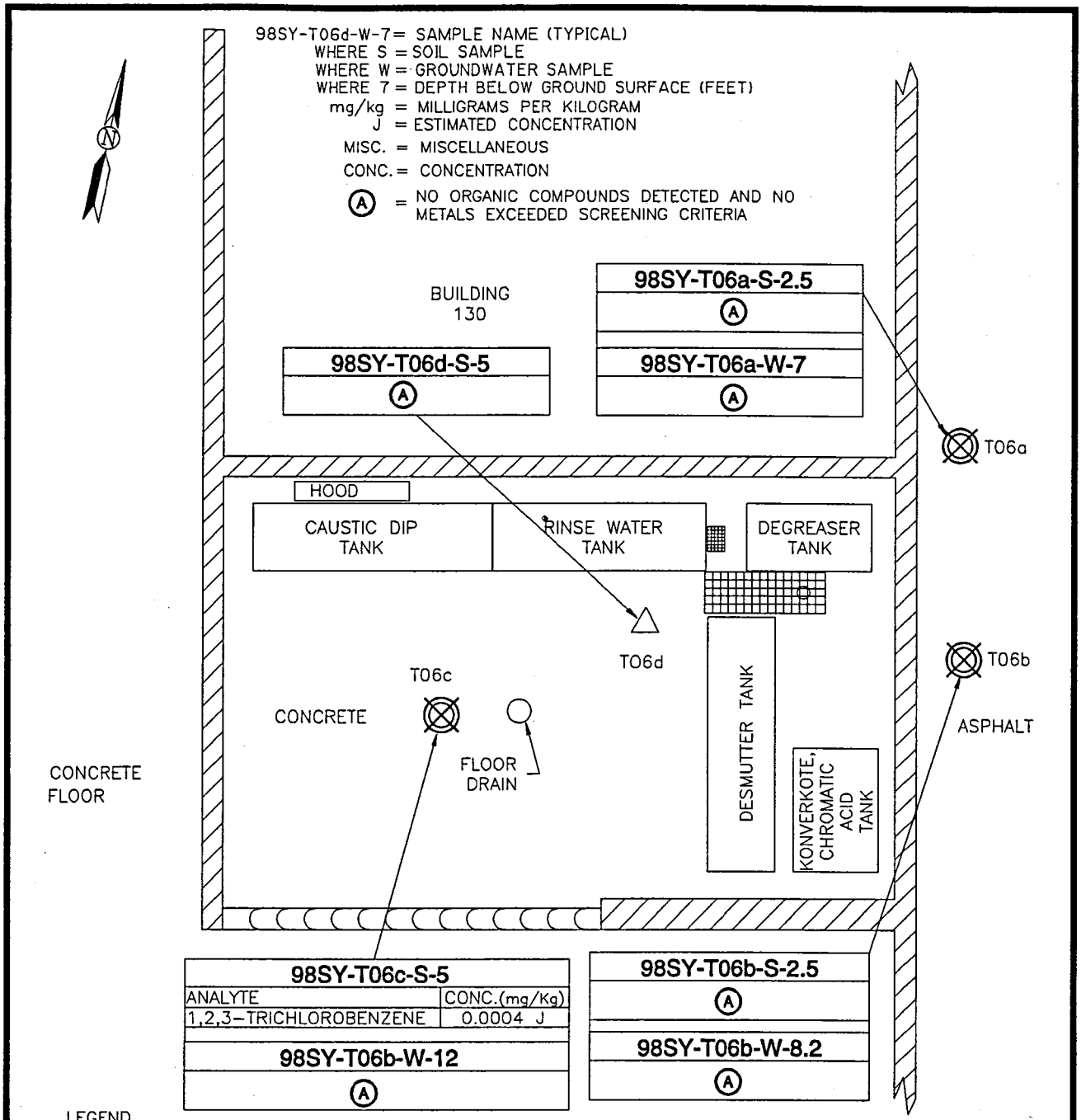
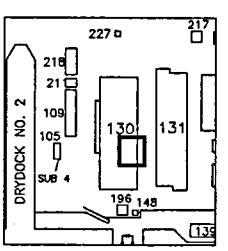


LEGEND

- = CHAIN LINK FENCE
- AOC = AREA OF CONCERN
- HWF = HAZARDOUS WASTE FACILITY
- PT = PROCESS TANK
- = BUILDING WALL
- = BERM
- LBNSY = LONG BEACH NAVAL SHIPYARD
- = SOIL AND GROUNDWATER SAMPLING LOCATION
- = SOIL SAMPLE LOCATION

NOTE: THIS FIGURE SHOWS ORGANIC COMPOUNDS DETECTED. NO METALS EXCEEDED SCREENING CRITERIA.



AREA LOCATION MAP

0 5 10

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING RESULTS SUMMARY, JUNE 1998 AOC PT 6 SHEET METAL CLEANING/PLATING SHOP BUILDING 130 EAST GROUP B AREAS OF CONCERN	FIGURE 4.70-5
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.70-5		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.71 CLEANING DIP TANKS, BUILDING 129 (AOC PT 7)

This section presents a description of the Building 129 Cleaning Dip Tanks (AOC PT 7), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.71.1 Site Description

Table 4.71-1 summarizes the location and characteristics of AOC PT 7. A site map is provided as Figure 4.71-1 and a site photograph is shown in Figure 4.71-2.

Table 4.71-1
AOC PT 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 7	Inside southeastern corner of Building 129.	E-31, F-31	Dip tanks for cleaning.	10 cleaning tanks and 10 rinsing tanks.	Unknown.

AOC = Areas of Concern No. = Number PT = Process Tank

The AOC PT 7 cleaning facility, located in the southeastern corner of Building 129, consisted of a series of ten process and ten rinse tanks (CDM 1977). Cleaning processes used at this facility include soak cleaning, carbon removal, bright dip, rust prevention dip, and rinsing. During the March 1998 site reconnaissance, the southeastern area of Building 129 was inspected and no evidence of past cleaning operations was found. The southernmost portion of the room had concrete floors, while the remainder of the room floor consisted of wood blocks.

4.71.2 Operational History and Waste Characteristics

Table 4.71-2 summarizes the operational history and waste characteristics of AOC PT 7. The marine machine shop cleaning facility, located in the southeastern corner of Building 129, was constructed by 1977 (CDM 1977). The cleaning dip tanks were most likely used until the late 1980s, based on the fact that the operations were not noted in industrial process investigations conducted at LBNSY in the early 1990s. The area was most recently was used as a hydraulic testing area.

Table 4.71-2
AOC PT 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 7	Approximately 1975 to the late 1980s	Steam-cleaning.	Condensate including oil, grease, detergents, and inorganic solids.	Approximately 28,000 gallons per day.
		Rinsing activities	Rinse water including oil and grease, detergent, methylene chloride, cresol, chromic acid, nitric acid, sulfuric acid, copper, and zinc.	13 gallons per minute.
		Soak cleaning operations.	Wastewater.	7 gallons per minute.
		Bright dipping.	Wastewater.	3 gallons per minute.
		Carbon removal.	Wastewater.	3 gallons per minute.
		Scrubbing activities.	Overflow wastewater containing organic contaminants such as phenolic compounds.	2 gallons per minute.

Notes:

Source: CDM 1978, *Environmental Engineering Survey*.

AOC = Area of Concern
HWF = Hazardous Waste Facility
No. = Number
PT = Process Tank

The maximum waste flow rate from the marine machine shop cleaning operations was approximately 30 gallons per minute (CDM 1977), while the estimated daily flow rate was 28,000 gallons per day (CDM 1978). Waste was generated from rinse and steam-cleaning processes. The condensed discharge from the steam-cleaning operation included quantities of oil and grease, detergents, inorganic solids, and phenols. The waste constituents included chromic acid, nitric acid, sulfuric acid, caustics, and phenols (CDM 1977). The effluent from this facility continuously flowed by gravity to the sanitary sewer system. Wastes from equipment cleanup and leaks and spills of process solutions were included in the wastewater (NEESA 1983). No specific information was found regarding the operational management, nor the frequency and volume of spills at AOC PT 7.

The tanks contained the following materials (CDM 1977):

Soak cleaning
- Sodium carbonate
- Biodegradable surfactants
- Sodium sulfate
- Sodium phosphate
- Sodium gluconate
- Bath contaminants: oil and grease

Bright dipping
- Chromic acid
- Nitric acid
- Sulfuric acid
- Bath contaminants: copper, zinc

Carbon removal
- Cresol
- Phenol
- Oleic acid
- Potassium hydroxide
- Methylene chloride
- Ethylenediamine-tetraacetic acid
- Bath contaminants: oil and grease

Rust prevention
- Borax
- Sodium nitrate

4.71.3 Preliminary Assessment Resources

Table 4.71-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.71-3
AOC PT 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Building 129 Tank Cleaning Area Sketch SK-6004	1975	LBNSY Public Works	Shows tank cleaning room
Environmental Engineering Survey	1977	CDM, Inc.	AOC PT 7 tank volumes, chemicals used, and disposal information.
Industrial Waste Collection and Treatment Facilities	1978	CDM, Inc.	AOC PT 7 tank volumes, chemicals used, and disposal information.
Initial Assessment Study	1983	NEESA	Reports potential spillage from process tanks during production and cleanout.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	AOC PT 7 not mentioned.
Draft Sampling and Analysis Plan Industrial Wastewater Discharge Study	1991	SCS Engineers	AOC PT 7 not mentioned.
Industrial Wastewater and Industrial Waste Treatment Plant Control	1993	Kennedy/Jenks	AOC PT 7 not mentioned.
Personnel Interview	1998	Johnson and Nunn LBNSY-ED	General AOC PT 7 information.

AOC = Area of Concern
CDM Inc. = Camp, Dresser, & McKee Inc.
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
PT = Process Tank

4.71.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PT 7. Soil sampling was recommended and included in the Work Plan (CDM Federal 1998a) to assess whether wastes may have impacted the soil beneath the tanks. Soil samples were recommended for analysis for metals and VOCs.

4.71.5 Number of Samples and Analyses

The Work Plan (CDM Federal 1998a) recommended that four soil samples be collected at the cleaning area in Building 129. After coring through concrete, one sample could not be collected because the direct push sampling device hit refusal that appeared to be caused by a second concrete floor about 4 feet beneath the first floor. Therefore, only three soil samples were collected. Soil samples were collected for AOC PT 7 locations on 11 June and 17 June 1998. Samples were analyzed for the analytical categories indicated in Table 4.71-4. Soil samples were collected at a depth of five feet bgs, which was the expected depth of the bottom of the tanks. Sample locations are shown in Figure 4.71-3.

Table 4.71-4
AOC PT 7 Number of Samples and Analyses

Matrix	VOCs	Metals
Soil	3	3

AOC = Area of Concern PT = Process Tank VOCs = Volatile Organic Compounds

4.71.6 Analytical Results

Analytical results for the AOC PT 7 soil samples are presented in Tables 4.71-5 and 4.71-6 and summarized in Figure 4.71-4.. As indicated on Table 4.71-5, no VOCs were detected in the three soil samples collected from AOC PT 7. Ten metals were detected at AOC PT 7.

4.71.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.71.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples, as described in Appendix O.

4.71.9 Recommendations

No further action is recommended for AOC PT 7 because samples were collected but no analytes exceeded their respective screening criteria.

Table 4.71-5
AOC PT 7 Soil Sampling Results Summary for Organic Compounds
June 1998

SOIL					
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)	3	0	ND	N/A	0

Notes:

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

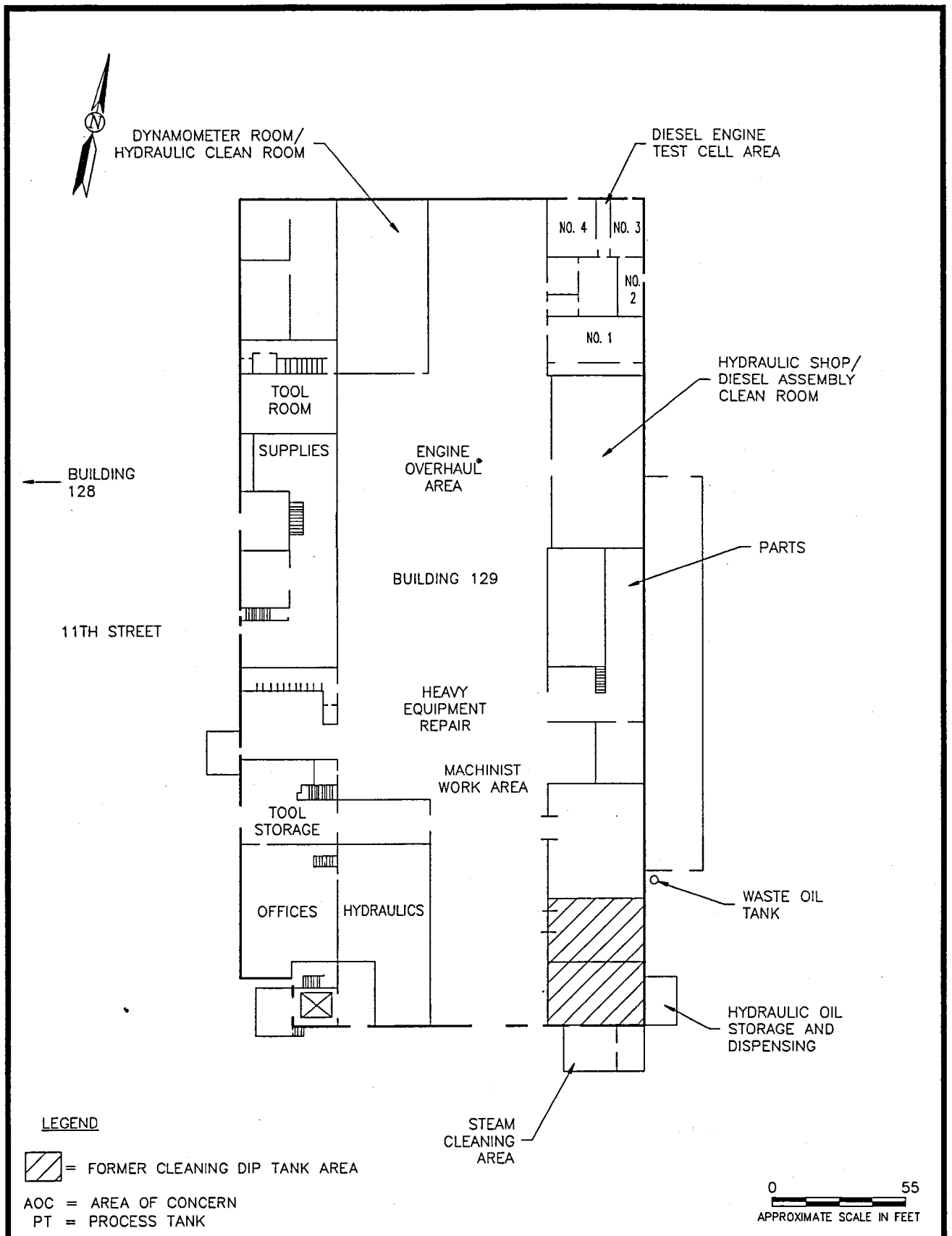
Table 4.71-6
AOC PT 7 Soil Sampling Results Summary for Metals
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	3	0	ND	750	11.3	0
Arsenic	3	3	1.9, 2.7, 2.2	3.0	17.5	0
Barium	3	3	25.6, 52.7, 30.8	100,000	275	0
Beryllium	3	0	ND	3,400	1.4	0
Cadmium	3	0	ND	930	1.7	0
Chromium	3	3	4.9, 10.5, 13.6	450	60.9	0
Cobalt	3	3	2.4, 5.7, 2.6	29,000	24.5	0
Copper	3	3	3.6, 10.3, 3.9	70,000	798.7	0
Lead	3	3	0.48, 7.3, 2.2	1,000	185.2	0
Mercury	3	2	0.054J, 0.034J	560	2.5	0
Molybdenum	3	0	ND	9,400	NA	0
Nickel	3	3	3.2, 9.2J, 8.1J	37,000	32.6	0
Selenium	3	0	ND	9,400	1.4	0
Silver	3	0	ND	9,400	1.5	0
Thallium	3	0	ND	150	4.2	0
Vanadium	3	3	10.5, 21.0, 11.3	13,000	84.9	0
Zinc	3	3	13.0, 29.2, 15.5	100,000	844.9	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligram Per Kilogram
ND = Not Detected
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 7 CLEANING DIP TANKS BUILDING 129 GROUP B AREAS OF CONCERN	FIGURE 4.71-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.71-1	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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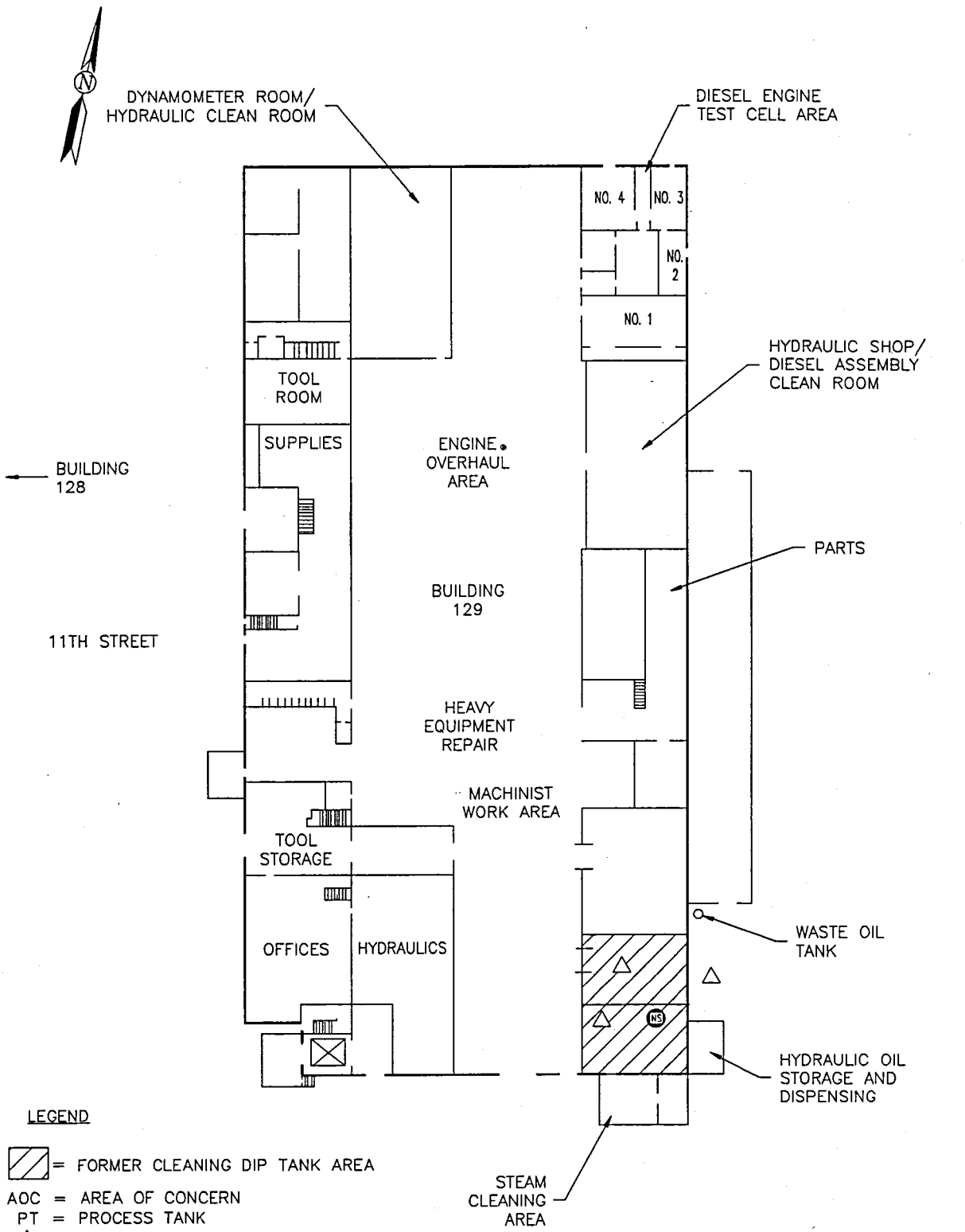
Figure 4.71-2 Former Cleaning Dip Tank Area, Building 129 (AOC PT 7) 12/15/98
Facing South



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AOC PT 7 CLEANING DIP TANKS BUILDING 129 GROUP B AREAS OF CONCERN	FIGURE 4.71-3
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.71-3		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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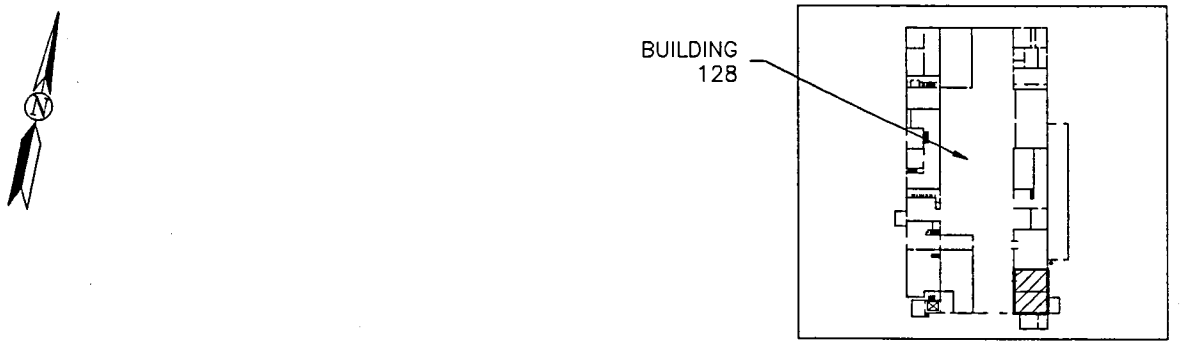
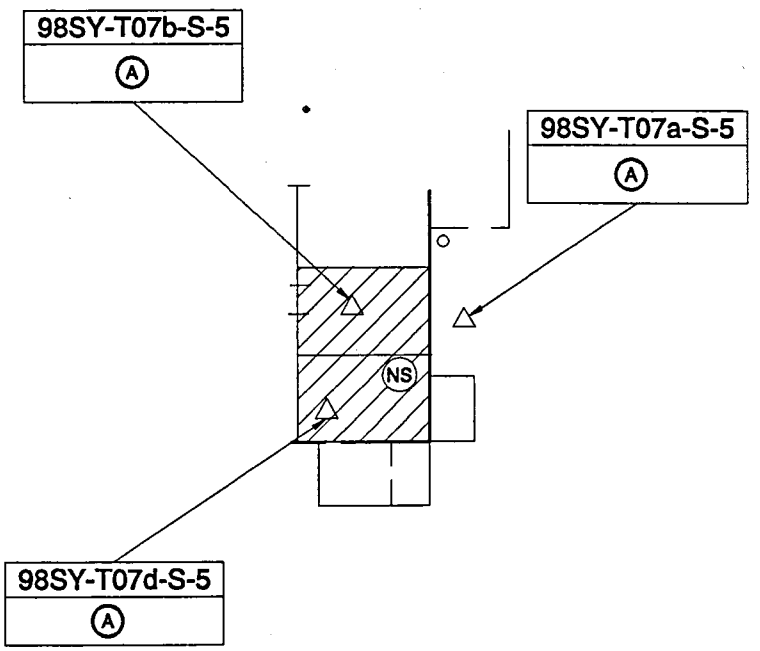


AREA LOCATION MAP



98SY-T07d-S-5 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE 5 = DEPTH BELOW GROUND SURFACE (FEET)

LEGEND

AOC = AREA OF CONCERN
PT = PROCESS TANK

= FORMER CLEANING DIP TANK AREA

△ = SOIL SAMPLE LOCATION

(NS) = NO SAMPLE COULD BE COLLECTED DUE TO REFUSAL CAUSED BY SUBSURFACE OBSTRUCTION.

(A) = NO ORGANIC COMPOUNDS DETECTED AND NO METALS EXCEEDED SCREENING CRITERIA.

0 50
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING RESULTS, JUNE 1998 AOC PT 7 CLEANING DIP TANKS BUILDING 129 GROUP B AREAS OF CONCERN	FIGURE 4.71-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.71-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014-157		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.72 TIN DIP TANKS, BUILDING 132 (AOC PT 8)

This section presents a description of the Building 132 Tin Dip Tanks (AOC PT 8), their operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.72.1 Site Description

Table 4.72-1 summarizes the location and characteristics of AOC PT 8. A site map is provided as Figure 4.72-1, while site photographs are shown in Figures 4.72-2 to 4.72-3.

Table 4.72-1
AOC PT 8 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 8	Inside northwestern part of Building 132, first floor.	G-31, G-32	Molten metal dip tanks.	Fifteen aboveground dip tanks.	Each approximately 15 gallons, one foot in depth.

AOC = Area of Concern No. = Number PT = Process Tank

This site consisted of fifteen "Babbitt" dip tanks located inside the northwestern part of Building 132 on the first floor. During the March/April 1998 site reconnaissance, it was observed that only 3 of these tanks remained. The tanks are approximately 4 feet above the ground, oval, approximately one foot deep, and each tank has a capacity to hold approximately 15 gallons. Each tank has a metal cover and sits on a concrete foundation surrounded by metal, wood block, or concrete floors. No evidence of spills was observed during the site reconnaissance, but the dipping process suggests that spills were possible.

The 1996 EBS called AOC PT 8 "Plating Shop, Building 132, West side," but no plating shops were found to exist there (except AOC PT 5 on the second floor, addressed in Section 4.69 of this report). It appears that the EBS misidentified the location and identity of these tanks.

4.72.2 Operational History and Waste Characteristics

Table 4.72-2 summarizes the operational history and waste characteristics of AOC PT 8.

Table 4.72-2
AOC PT 8 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 8	1940s to 1990s	Tin and lead alloy dipping for manufacturing and reconditioning bearings.	Spilled metal waste from tanks and rinse wastewater.	Unknown

AOC = Area of Concern No. = Number PT = Process Tank

Prior to the 1990s, operations at the Building 132 dip tanks consisted of approximately fifteen tanks and was designated as the Babbitt Shop. The tanks were pots or kettles that were used in conjunction with the casting and dipping for the tin Babbitt process (NFESC 1995). The metal casting process was used for the manufacturing and reconditioning of bearings. The general process consisted of preparing a mold, heating the Babbitt or tin alloy part, pouring molten metal into the mold, allowing the part to cool, removing the part from the mold, and cleaning and finishing the surface of the part (NFESC 1995). Recent operations used only three dip tanks, with one casting tank containing 97 to 99% tin and the remaining two for the Babbitt process consisting of 89% tin, 7% antimony, 3% copper, and less than 1% lead and other metals based on 1996 test results of this waste (LBNSY-ED 1996b).

Two floor drains are located in the northwestern corner of Building 132. These tanks do not discharge directly to the floor drains, but there was a possibility of spills when parts were removed from the tanks. The floor drains are reportedly connected to the separator/clarifier system located east of Building 132 (see Section 4.50 of this report), which discharges to the sanitary sewer. The floor drains' wastewater flow was highly variable and was estimated at less than 10 gallons per day (SCS 1991). The source of the wastewater was likely from rinsing associated with the Babbitt operations.

4.72.3 Preliminary Assessment Resources

Table 4.72-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.72-3
AOC PT 8 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Unknown Sketch No.	Pre-1947	LBNSY Map	Shows 15 Babbitt Tanks at the northwestern part of Building 132.
Sketch No. 4090	1947	LBNSY-PW	Installation of electrical connections to Babbitt tanks.
Sketch No. 4705	1949	LBNSY-PW	Plans for installation of combustion safeguard units.
Sketch No. 8722	1965	LBNSY-PW	Sketch verifying tanks exist.
Environmental Engineering Survey	1977	CDM, Inc.	No mention of AOC PT 8 operations.
Initial Assessment Study	1983	NEESA	No mention of AOC PT 8 operations.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	No mention of AOC PT 8 operations.
Draft Sampling and Analysis Plan Industrial Wastewater Discharge Study	1991	SCS Engineers	Describes AOC PT 8 waste disposal methods.
Industrial Wastewater and Industrial Waste Treatment Plant Control	1993	Kennedy/Jenks	No mention of AOC PT 8 operations.
Industrial Process Assessment Report	1995	NFESC	Babbitt process and materials used.
Closure Documentation	1996	LBNSY-ED	Laboratory analysis results for tank contents.
Personal Interview	1998	Johnson and Nunn LBNSY-ED	General AOC PT 8 operations.

AOC = Area of Concern
CDM Inc. = Camp, Dresser, & McKee, Inc.
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity
NFESC = Naval Facilities Engineering Service Center
No. = Number
PT = Process Tank

4.72.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PT 8 because of the potential for spills and the longtime period of operation. Soil sampling was recommended in the Work Plan (CDM Federal 1998a) to assess whether or not wastes may have impacted the soil beneath the tin dip tanks. Soil samples collected beneath the dip tanks at Building 132 were recommended for analysis for metals.

4.72.5 Number of Samples and Analyses

As proposed in the Work Plan (CDM Federal 1998a), two soil samples were collected. Soil samples were collected on 11 June 1998 and analyzed for metals as indicated in Table 4.72-4.

Soil samples were collected at a depth of one foot below ground surface. Sample locations are shown in Figure 4.72-4.

Table 4.72-4
AOC PT 8 Number of Samples and Analyses

Matrix	Metals
Soil	2

AOC = Area of Concern PT = Process Tank

4.72.6 Analytical Results

Analytical results for the AOC PT 8 soil samples are presented in Table 4.72-5 and summarized in Figure 4.72-4.

Tin was detected in both samples, at concentrations of 24.3J and 12.4J mg/kg. Twelve of the other seventeen metals were detected in the two soil samples.

4.72.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria. The tin concentration in the two samples (24.3J and 12.4J mg/kg) was far below the industrial PRG of 100,000 mg/kg.

4.72.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.72.9 Recommendations

No further action is recommended for the Tin Dip Tanks because samples were collected but no analytes exceeded their respective screening criteria.

Table 4.72-5
AOC PT 8 Sampling Results Summary for Metals
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	0	ND	750	11.3	0
Arsenic	2	2	4.4, 4.3	3.0	17.5	0
Barium	2	2	88.4, 88.2	100,000	275	0
Beryllium	2	0	ND	3,400	1.4	0
Cadmium	2	0	ND	930	1.7	0
Chromium	2	2	11.4, 18.3	450	60.9	0
Cobalt	2	2	6.5, 9.8	29,000	24.5	0
Copper	2	2	11.3, 16.7	70,000	798.7	0
Lead	2	2	4.1, 3.6	1,000	185.2	0
Mercury	2	2	0.050J, 0.028J	560	2.5	0
Molybdenum	2	2	0.35, 0.35	9,400	NA	0
Nickel	2	2	8.4, 14.3	37,000	32.6	0
Selenium	2	0	ND	9,400	1.4	0
Silver	2	2	0.087J, 0.097J	9,400	1.5	0
Thallium	2	0	ND	150	4.2	0
Tin	2	2	24.3J, 12.4J	100,000	NA	0
Vanadium	2	2	27.0, 34.9	13,000	84.9	0
Zinc	2	2	33.3, 51.2	100,000	844.9	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency

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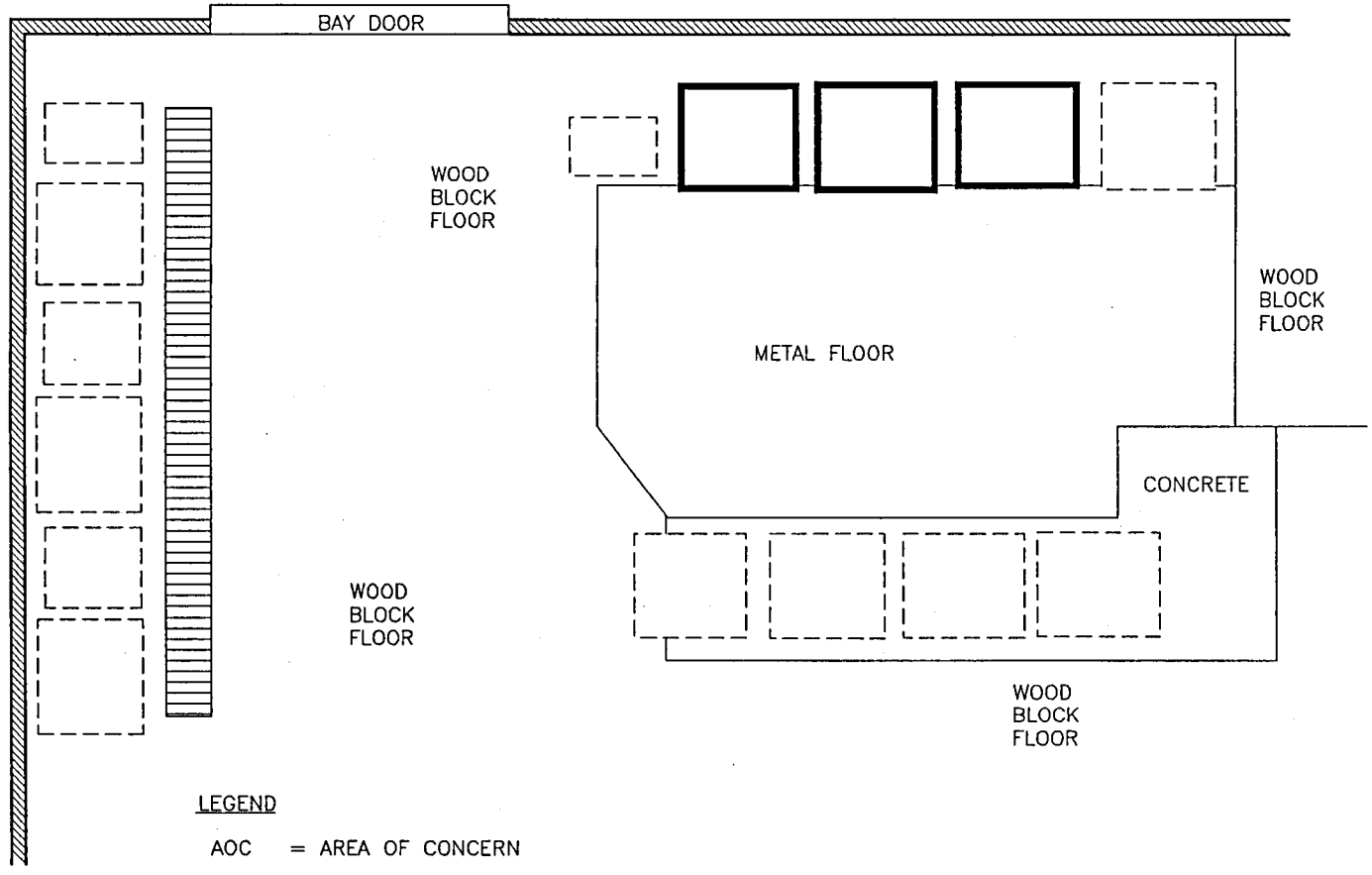

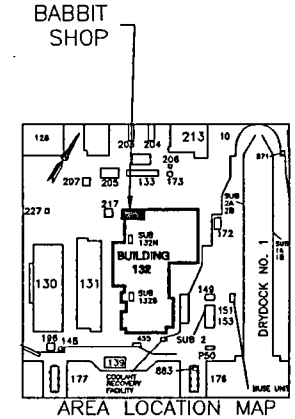

AREA LOCATION MAP

0 10
APPROXIMATE SCALE IN FEET

L-214

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC PT 8 TIN DIP TANKS, BABBIT SHOP BUILDING 132 GROUP B AREAS OF CONCERN	FIGURE 4.72-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.72-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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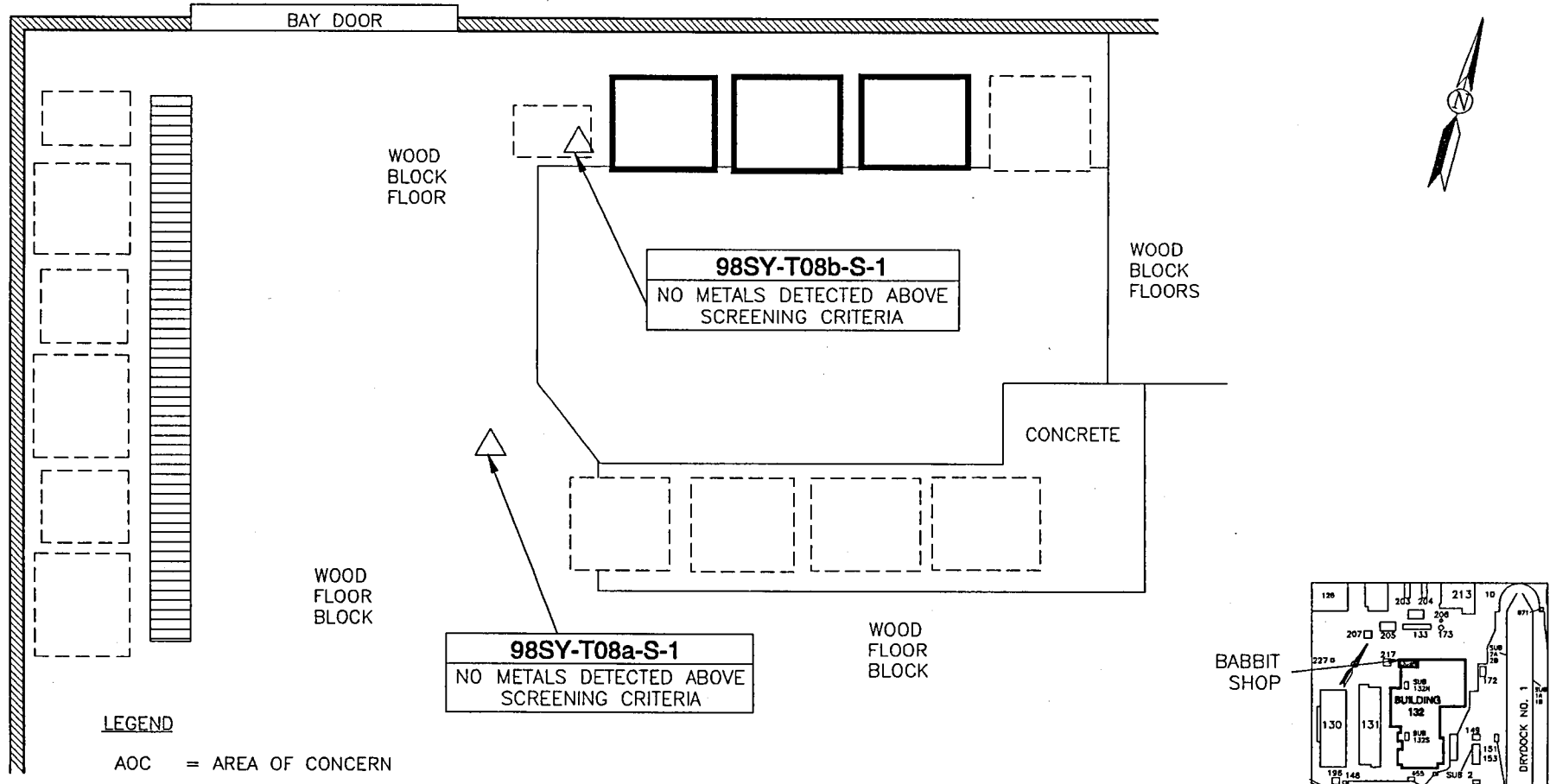
Figure 4.72-2 Babbitt Dip Tanks, Building 132 Facing Northwest 3/19/98

Figure 4.72-3 Babbitt Dip Tank Area, Building 132, Facing Northeast 6/11/98



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/99
FN: 4.72-4
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING LOCATIONS AND RESULTS SUMMARY, JUNE 1999
AOC PT 8
TIN DIP TANKS, BABBIT SHOP
BUILDING 132
GROUP B AREAS OF CONCERN

FIGURE
4.72-4

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.73 QUENCH TANKS, BUILDING 128 (AOC PT 10)

This section presents a description of the Building 128 Quench Tanks (AOC PT 10), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.73.1 Site Description

Table 4.73-1 summarizes the location and characteristics of AOC PT 10. A site map is shown in Figure 4.73-1. Site photographs are shown in Figures 4.73-2 through 4.73-4.

Table 4.73-1
AOC PT 10 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 10	Inside eastern portion of Building 128.	C-29, C-30 D-29, D-30	Quench Tanks used in the Heat Treatment Area at Building 128.	Three existing quench oil tanks.	Three quench oil tanks each 4 feet by 5 feet by 43 inches deep.
				1 solvent degreasing tanks.	One solvent degreasing tank 3 feet by 4 feet by 43 inches deep.
				2 water quench tanks.	Two water tanks: -4 feet by 5 feet by 55 inches deep.
				1 carburizing compound tank	One carburizing compound tank: 3 feet by 4 feet by 3 feet deep.
				Three former tanks: oil tank, brine tank, and lead tank.	Former tanks: unknown.
	Inside north central portion of Building 128 (Dirt Floor Area)	C-29, C-30 D-29, D-30	Quench Tank used in the Dirt Floor Area at Building 128.	One oil quench tank	One tank 45 inches in diameter by 15 feet deep.

AOC = Area of Concern No. = Number PT = Process Tank

The process tanks at AOC PT 10 are situated in two different locations inside Building 128. Seven of the eight tanks at this AOC are located in the heat treatment area along the eastern side of Building 128. The eighth tank, a large quench oil tank, was situated approximately 200 feet to the northwest on the concrete foundation of the dirt floor area (see Section 4.57).

During the January and April 1998 site reconnaissances, eight tanks were observed. The tanks and floor appeared to be in good condition; the tanks were covered with plastic sheeting and were no longer in use. The tanks are made of steel, and include four quench oil tanks, one

solvent degreasing tank, one carburizing compound tank, and two water quench tanks. Adjacent to the tanks is a 1 foot wide, 2 foot deep utility trench covered with metal plates on the eastern side of the tanks. The six tanks are located on a concrete floor, but are set one foot below the floor surface.

4.73.2 Operational History and Waste Characteristics

Table 4.73-2 summarizes the operational history and waste characteristics of AOC PT 10.

Table 4.73-2
AOC PT 10 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 10	1943 to 1996	Quench tanks used to cool metal in the heat treatment area to increase metal hardness.	Metals, oil and grease in the quench tank wastewater. Waste 1,1,1-trichloroethane from solvent degreaser tank.	10 gallons per day.

AOC = Area of Concern No. = Number PT = Process Tank

The quench tanks were used in conjunction with the heat treatment area for increasing the hardness of various metals. The metal parts were sent to the heat treatment area from ships, the foundry, or other LBNSY shops. The parts were heat-treated by placing them into an oven at a temperature between 150 to 300° F and then placing them into either an oil cooling/quench tank or a water quench tank. During the March 1998 site reconnaissance, one solvent tank was observed to be labeled 1,1,1-TCA; 1,1,1-TCA commonly replaced the use of TCE in the 1980s, so it is possible that other solvents were used prior to the 1990s. The carburizing compound used in one tank contained barium carbonate.

A separate quench oil tank is located in the dirt floor area in the northeastern corner of Building 128. This tank was emptied and cleaned approximately every eight years (NEESA 1990). There is limited information on the operations of this tank. The tank, situated on a concrete foundation in the dirt floor area of the foundry, was empty during the March 1998 site reconnaissance.

Tank discharges may have occurred from tank liquid overflow when parts were immersed or if parts dripped after they were removed from the tanks. These discharges may have included wastewater, solvents, and quench oil. Discharges may have entered the trench located adjacent to the tanks, then flowed to the sanitary sewer system. The quench tanks reportedly discharged less than 10 gallons of liquid waste per day. The quench tanks were emptied and cleaned approximately every three years; wastes from these cleaning activities were transported offsite for disposal (NEESA 1990). LBNSY personnel reported that there was a history of leaks and spills from the quench tanks during operations (Johnson, pers. comm., 1998) and that the heat treatment area had "safestep" absorbent available to cleanup spills. Spills and leaks through the single-walled tanks had the potential for impacting the soil and groundwater

beneath the concrete, via cracks or seams in the concrete. Metals, oil and grease, and chlorinated solvents were the likely contents of waste liquids. The solvent degreaser tank continued operation without replacing the solvent from the tank.

Three former tanks, identified in a 1943 drawing as an oil tank, brine tank, and lead tank, were located south of the other tanks as shown in Figure 4.73-1. The use and function of the brine tank and lead tank are unknown.

The solvent degreasing tank was investigated in 1998 as Area of Potential Concern (AOPC) N-7 as part of the SGI (BNI 1999). At one sampling location next to the tank, a hole was cored through the concrete in the trench and soil samples were collected at 1 and 5 feet bgs, but no VOCs were detected.

4.73.3 Preliminary Assessment Resources

Table 4.73-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.73-3
AOC PT 10 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 2719	1943	LBNSY-PW	Shows Heat Treatment Area and Tank locations.
Drawing No. 1532	1945	LBNSY-PW	Shows Heat Treatment Shop and air line alteration.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Discusses the cleaning and operation of the quench tanks in Building 128.
Sampling and Analysis Plan	1991	SCS Engineers	Information on the discharges and potential wastes from the quench tanks at Building 128.
Industrial Process Assessment Report	1995	NFESC	Describes the heat treatment process including the quench tanks at Building 128.
Personnel Interviews	1998	Johnson, LBNSY	Information on the quench operations inside the east part of Building 128.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NFESC = Naval Facilities Engineering Service Center
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PT = Process Tank

4.73.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PT 10 because of the reported spills and leaks from the quench tanks and the lack of information on the quench tanks located in the eastern and northeastern sections of Building 128. Soil and groundwater samples were planned for collection with analysis for metals, TPH, SVOCs including PAHs, and PCBs (possibly in quench oil) as described in the Work Plan (CDM Federal 1998a). One soil sample was recommended for analysis for dioxins and furans because of the potential for PCBs to have

formed dioxins and furans during heat treatment; the sample with the highest PCB concentration was planned for dioxins and furans analysis (CDM Federal 1998a).

4.73.5 Numbers of Samples and Analyses

As described in the Work Plan (CDM Federal 1998a), four soil and three groundwater samples were collected. Sample locations are indicated in Figure 4.73-5. Soil and groundwater samples were collected on 11 June and 17 June 1998 and analyzed for the analytical categories indicated in Table 4.73-4. After the sample with the highest PCB concentration was identified, the soil sample for dioxins and furans analysis was collected on 15 December 1998. Soil samples were collected at depths of 3 to 5 feet below ground surface (i.e., below the bottom of the tanks and nearby utility trench), except for the soil sample collected near the quench oil tank in the dirt floor area, which was a surface soil sample because that area is not paved. Groundwater samples were collected at 10, 12, and 12.6 feet below ground surface, depending on the depth at which groundwater was first encountered at each sample location.

Table 4.73-4
AOC PT 10 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-g	TPH-d	TPH-o	PCBs	Dioxins and Furans
Soil	4	4	4	4	4	4	4	1[(b)]
Groundwater	3	3	3[(a)]	3	3	3	3	0

Notes:

(a) Dissolved Metals
(b) As stated in the Work Plan, one sample for dioxins and furans analysis was planned.

AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
PT = Process Tank
SVOCs = Semivolatile Organic Compounds
TPH-g = Total Petroleum Hydrocarbons, gasoline range
TPH-d = Total Petroleum Hydrocarbons, diesel range
TPH-o = Total Petroleum Hydrocarbons, motor oil range
VOCs = Volatile Organic Compounds

4.73.6 Analytical Results

Analytical results for AOC PT 10 soil and groundwater samples are summarized in Tables 4.73-5 (soil), 4.73-6 (toxicity equivalency factors and TCDD equivalent for one soil sample), and 4.73-7 (groundwater), as well as in Figure 4.73-6.

4.73.6.1 Soil

As indicated on Table 4.73-5, no VOCs were detected. The SVOCs BEHP, chrysene, fluoranthene, and phenanthrene were detected in at least one of the four samples. PCB Aroclor 1260, TPH-gasoline, TPH-diesel, and TPH-motor oil were also detected in at least one of the four samples. The highest PCB, TPH-diesel, and TPH-motor oil concentrations were

detected in the sample collected near the quench oil tank in the dirt floor area, sample 98SY-T10d-S-0.

Several dioxin and furan isomers were also detected in the soil sample 98SY-T10d-S-0, as shown in Table 4.73-6.

Of the 17 metals analyzed, beryllium was the only metal not detected in any one of the four soil samples, as shown in Table 4.73-7.

4.73.6.2 Groundwater

No PCBs or TPH-diesel were detected in any of three groundwater samples. Five VOCs were detected in sample 99SY-T10c-W-10: carbon tetrachloride, methylene chloride, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene. The only SVOC detected was BEHP, at 0.110 mg/L in sample 98SY-T10c-W-10 located in the central southern portion of the quench tank area between a solvent and quench oil tank. TPH-gasoline and TPH-motor oil were also detected in at least one of the samples.

Of the 17 metals analyzed, only arsenic, barium, mercury, and molybdenum were detected in at least one sample.

4.73.7 Data Comparison to Screening Criteria

Organic compounds did not exceed screening criteria, except in two cases: 1) soil sample 98SY-T10d-S-0 for PCBs (1.4J mg/kg compared to industrial PRG of 1.3 mg/kg) and for dioxins and furans (TEF of 9.7×10^{-5} compared to the screening criteria of 3×10^{-5}), and 2) in groundwater sample 98SY- T10c-W-10 for BEHP (0.110 mg/L compared to Ocean Plan criteria of 0.0035 mg/l).

Three metals (arsenic, chromium, and lead) were detected at concentrations above industrial PRGs and background levels in soil sample 98SY-T10d-S-0, which was collected at the dirt floor in the heat treatment/forging area. Antimony, cadmium, copper, and nickel were also detected in this sample above their respective residential PRGs, but not above their industrial PRGs. It is likely that these metals were present from forging activities (see Section 4.57), not quench tank activities. None of the three soil samples near the main set of quench tanks had concentrations of metals above criteria. Near the main set of quench tanks, mercury was detected in one of the groundwater samples (99SY-T10c-W-10) above the screening criteria and background level. All other concentrations of metals detected in one or more of the groundwater samples were below their respective industrial PRGs and/or background levels.

4.73.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

BEHP was not a suspected analyte of concern from quench tank activities. It is possible that the BEHP detections are a result of laboratory contamination, as discussed in Appendix O, although the reported concentration of 0.110 mg/L was the highest reported for any AOC. A duplicate groundwater sample (98SY-T10e-W-10) was collected at this location and the BEHP concentration was reported as 0.023 J mg/L, confirming the detection of BEHP, although showing high variability in results between the original and duplicate samples.

TPH-gasoline was reported at low concentrations in two soil and two groundwater samples, but these results should be used with caution because false positives may have occurred, as described in Appendix O.

4.73.9 Recommendations

Further action is recommended for AOC PT 10. First, the surface soil associated with sample 98SY-T10d-S-0 is recommended for removal because of elevated concentrations of metals, PCBs, and dioxins and furans. This surface soil is in the dirt floor area that is covered as AOC MISC 5 in Section 4.57 of this report.

Second, further action in the form of additional site characterization is recommended at the Building 128 quench tanks (AOC PT 10) near sampling location T10c because of the detection of BEHP and mercury in groundwater above screening criteria. The exact source of BEHP from quench oil tank processes is unknown. SVOCs analysis was performed to detect PAHs associated with quench oils, not because phthalates were expected. BEHP is a common laboratory contaminant, but typically not at the concentration reported in one groundwater sample at this AOC. Mercury was also detected above screening criteria in this sample. Five VOCs were also detected in this sample, although none exceeded screening criteria.

Recommended site characterization includes the collection and analysis of four groundwater samples, one approximately 5 to 10 feet away in each of the four directions from sampling location T10c, which is located near several quench and degreaser tanks inside Building 128. To the east, drilling rig access my not be possible (see Figure 4.73-4), so the sampling location should be located just outside the building, approximately 25 feet away from T10c. Soil samples should be collected at each groundwater sampling location at a depth of five feet below ground surface. Samples should be analyzed for mercury and SVOCs.

Table 4.73-5
AOC PT 10 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Carbon Tetrachloride	4	0	ND	0.52	0	3	1	0.0005J	0.0009	0
Methylene Chloride	4	0	ND	20	0	3	1	0.0003J	0.0043[f]	0
Tetrachloroethene	4	0	ND	16	0	3	1	0.001J	0.099	0
1,1,1-Trichloroethane	4	0	ND	1,400	0	3	1	0.003J	540	0
Trichloroethene	4	0	ND	6.1	0	3	1	0.0006J	0.027	0
SVOCs (64 analytes)[c]										
Bis(2-ethylhexyl)phthalate	4	1	6.9	210	0	3	1	**0.110J**	0.0035	1
Chrysene	4	1	0.86J	360	0	3	0	ND	8.8×10^{-6}	0
Fluoranthene	4	1	0.93J	37,000	0	3	0	ND	0.015	0
Phenanthrene	4	1	0.52J	NA	0	3	0	ND	NA	0
PCBs										
Aroclor 1260	4	2	0.15J, **1.4J**[d]	1.3	1[d]	3	0	ND	1.9×10^{-8}	0
Dioxins and Furans										
1,2,3,4,6,7,8-HeptaCDD	1[d]	1[d]	1.6×10^{-5}	NA	0	0	0	N/A	N/A	0
1,2,3,4,6,7,8,9-OctaCDD	1[d]	1[d]	2.18×10^{-5}	NA	0	0	0	N/A	N/A	0
2,3,7,8-TCDF	1[d]	1[d]	1.7×10^{-5}	NA	0	0	0	N/A	N/A	0
1,2,3,4,7,8-HexaCDF	1[d]	1[d]	1.9×10^{-5}	NA	0	0	0	N/A	N/A	0
1,2,3,6,7,8-HexaCDF	1[d]	1[d]	0.6×10^{-5}	NA	0	0	0	N/A	N/A	0
2,3,4,6,7,8-HexaCDF	1[d]	1[d]	1.1×10^{-5}	NA	0	0	0	N/A	N/A	0
1,2,3,4,6,7,8-HeptaCDF	1[d]	1[d]	0.46×10^{-5}	NA	0	0	0	N/A	N/A	0
1,2,3,4,6,7,8,9-OctaCDF	1[d]	1[d]	0.11×10^{-5}	NA	0	0	0	N/A	N/A	0
TCDD Equivalents	1	1	**9.7×10^{-5}**	3×10^{-5}	1[d]					

Table 4.73-5 (continued)
AOC PT 10 Sampling Results Summary for Organic Compounds
June 1998

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
TPH-Gasoline	4	2	0.05J, 0.04J	1,000[e]	0	3	2	0.02J, 0.02J	NA	0
TPH-Diesel	4	3	2J, 20J, 5,600[d]	10,000[e]	0	3	0	ND	NA	0
TPH-Motor Oil	4	3	2J, 92J, 12,000[d]	50,000[e]	0	3	1	0.06J	25	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) Surface soil sample 98SY-T10d-S-0 in the foundry area.
(e) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(f) No Ocean Plan criteria exist. Value presented is for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
CDD = Chlorinated dibenzodioxin
CDF = Chlorinated dibenofuran
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
O = Octa
PT = Process Tank
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TCDD = Tetrachlorodibenzodioxin
TCDF = Tetra chlorodibenzofuran
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.73-6
AOC PT 10 Toxicity Equivalency Factors and TCDD Equivalent for Dioxins and Furans
June 1998

SOIL			
Analytical Parameter	**Concentration (mg/kg)**	**Toxicity Equivalency Factor**	**TCDD Equivalent**
Dioxins and Furans			
2,3,7,8-TCDD	ND	1	N/A
1,2,3,7,8-penta CDD	ND	0.5	N/A
1,2,3,4,7,8-hexa CDD	ND	0.1	N/A
1,2,3,6,7,8-hexa CDD	ND	0.1	N/A
1,2,3,7,8,9-hexa CDD	ND	0.1	N/A
1,2,3,4,6,7,8-hepta CDD	$1.6x10^{-3}$	0.01	$1.6x10^{-5}$
1,2,3,4,6,7,8,9-octa CDD	$2.18 x10^{-2}$	0.001	$2.18x10^{-5}$
2,3,7,8-TCDF	$1.7x10^{-4}$	0.1	$1.7x10^{-5}$
1,2,3,7,8-penta CDF	ND	0.05	N/A
2,3,4,7,8-penta CDF	ND	0.5	N/A
1,2,3,4,7,8-hexa CDF	$1.9x10^{-4}$	0.1	$1.9x10^{-5}$
1,2,3,6,7,8-hexa CDF	$0.6x10^{-4}$	0.1	$0.6x10^{-5}$
2,3,4,6,7,8-hexa CDF	$1.1x10^{-4}$	0.1	$1.1x10^{-5}$
1,2,3,7,8,9-hexa CDF	ND	0.1	N/A
1,2,3,4,6,7,8-hepta CDF	$4.6x10^{-4}$	0.01	$4.6x10^{-6}$
1,2,3,4,7,8,9-hepta CDF	ND	0.01	N/A
1,2,3,4,6,7,8,9-octa CDF	$1.1x10^{-3}$	0.001	$1.1x10^{-6}$
		TCDD Equivalents	**$9.7x10^{-5}$**

Notes:

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
TCDD = Tetra Chlorinated Dibenzo Dioxins
TCDF = Tetra Chlorinated Dibenzo Dioxins
CDF = Chlorinated Dibenzo Dioxins
CDD = Chlorinated Dibenzo Dioxins
N/A = Not Applicable
ND = Not Detected

Table 4.73-7
AOC PT 10 Sampling Results Summary for Metals
June 1998

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	4	3	3.8J, 56.9J	750	11.3	0
Arsenic	4	4	3.4, 4.2, 2.5J, **21.6**[e]	3.0	17.5	1[e]
Barium	4	4	64.0, 114, 42.4J, 318	100,000	275	0
Beryllium	4	0	ND	3,400	1.4	0
Cadmium	4	2	0.56, 11.7	930	1.7	0
Chromium	4	4	12.5, 38.1, 15.9, **3,660**[e]	450	60.9	1[e]
Cobalt	4	4	6.8, 9.4, 4.9, 79.6	29,000	24.5	0
Copper	4	4	10.2, 52.1, 7.0J, 7,090	70,000	798.7	0
Lead	4	4	2.4, 35.8, 2.3J, **2,290**[e]	1000	185.2	1[e]
Mercury	4	4	0.034J, 0.96, 0.17J, 0.62	560	2.5	0
Molybdenum	4	2	0.32, 407	9,400	NA	0
Nickel	4	4	9.6, 14.3, 10.5J, 7,970J	37,000	32.6	0
Selenium	4	1	3.8J	9,400	1.4	0
Silver	4	3	0.070J, 0.060J, 11.2	9,400	1.5	0
Thallium	4	1	2.5J	150	4.2	0
Vanadium	4	4	25.8, 35.1, 17.0J, 69.2	13,000	84.9	0
Zinc	4	4	34.9, 142, 27.5, 1,700	100,000	844.9	0

Table 4.73-7 (continued)
AOC PT 10 Sampling Results Summary for Metals
June 1998

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	3	0	ND	1.2	0.0616	0
Arsenic	3	1	0.0017J	0.008	0.0276	0
Barium	3	3	0.105, 0.136J, 0.0555	1[d]	0.1777	0
Beryllium	3	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	3	0	ND	0.001	0.0017	0
Chromium	3	0	ND	190	0.0029	0
Cobalt	3	0	ND	2.2[d]	0.0071	0
Copper	3	0	ND	0.003	0.1072	0
Lead	3	0	ND	0.002	0.028	0
Mercury	3	1	**0.0018**	$4.0x10^{-5}$	0.0009	1
Molybdenum	3	2	0.0063, 0.00580	0.18[d]	NA	0
Nickel	3	0	ND	0.005	0.0958	0
Selenium	3	0	ND	0.015	0.040	0
Silver	3	0	ND	0.0007	0.0072	0
Thallium	3	0	ND	0.014	0.0075	0
Vanadium	3	0	ND	0.0107[d]	0.0107	0
Zinc	3	0	ND	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(e) Surface soil sample 98SY-T10d-S-0 in the dirt floor/heat treatment and forging area (see Section 4.57).

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
PRG = Preliminary Remediation Goal
PT = Process Tank
U.S. EPA = United States Environmental Protection Agency

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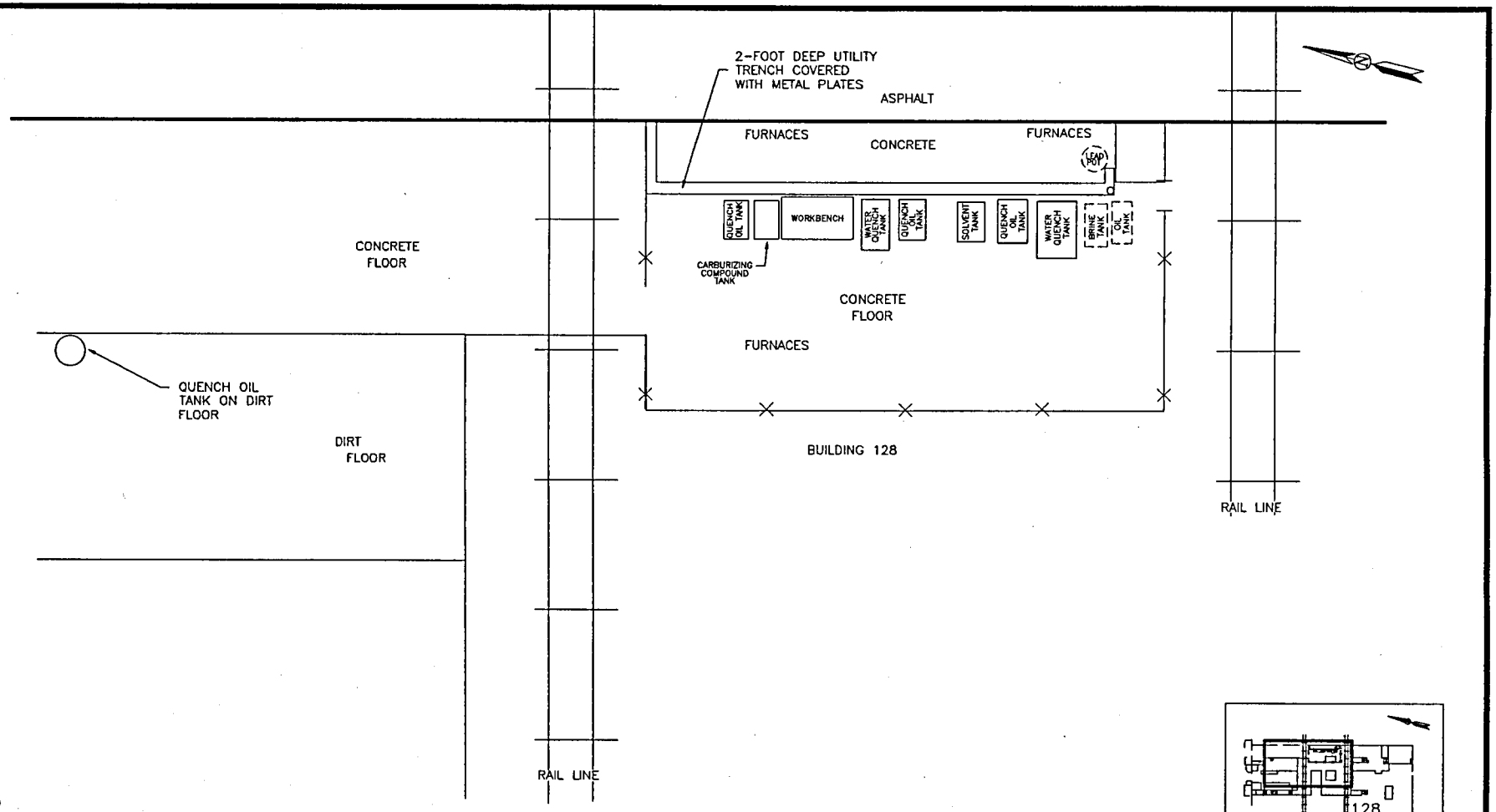


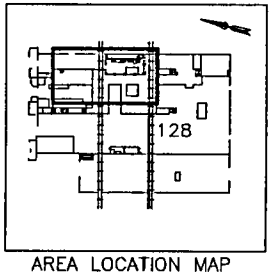
LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
PT = PROCESS TANK

= TANKS EXISTING IN 1998

= FORMER TANK LOCATIONS PER PUBLIC WORKS DRAWING NUMBER 265,224 (1943)

= BUILDING WALL



AREA LOCATION MAP

0 5 10 15 20
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.73-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

AOC PT 10
QUENCHING TANKS
BUILDING 128

GROUP B AREAS OF CONCERN

FIGURE
4.73-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.73-13

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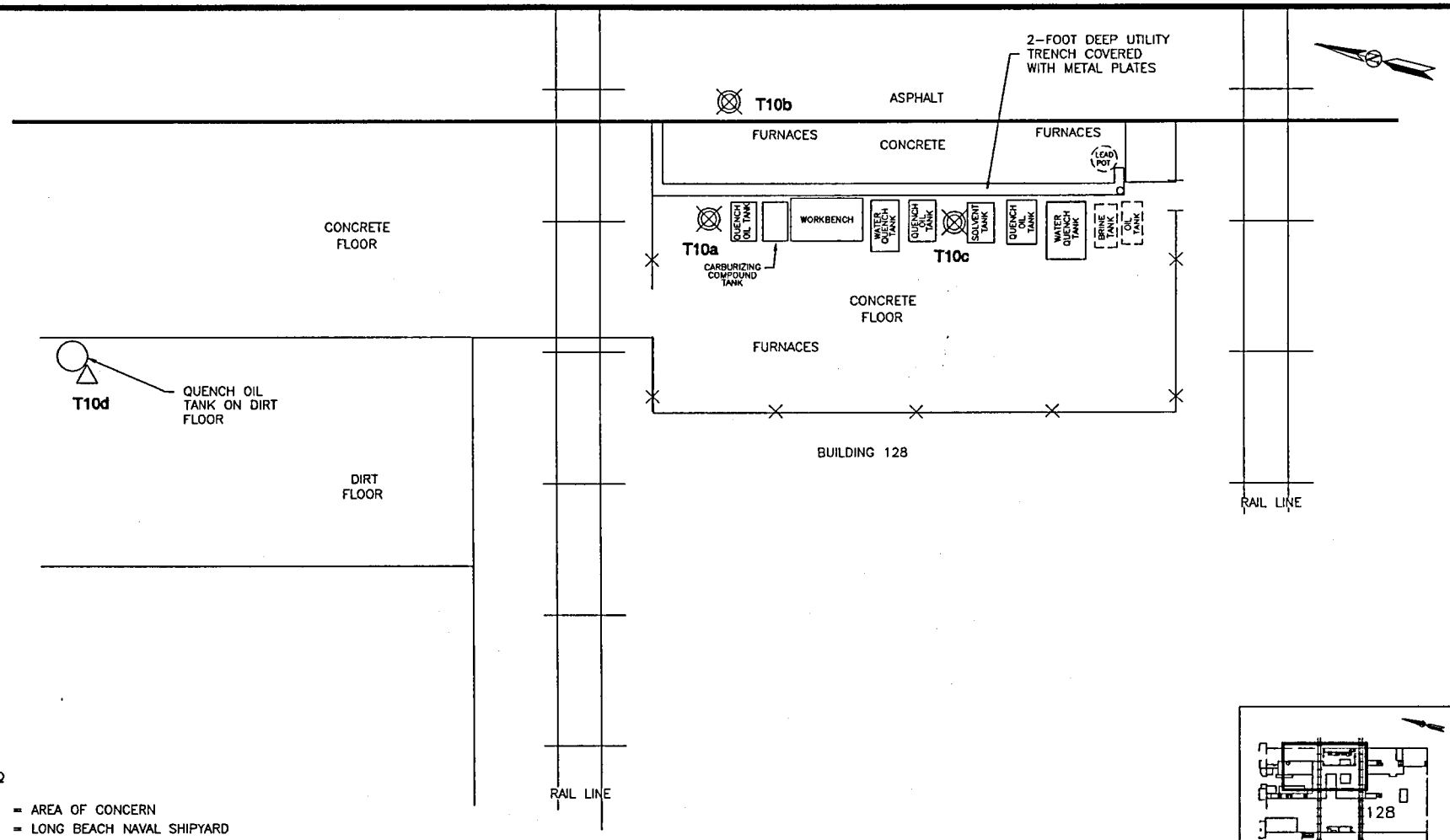
Figure 4.73-2 Quench Tanks, Building 128 (AOC PT 10)
Facing South 6/17/98

Figure 4.73-3 Oil Quench Tank in Dirt Floor Heat Treatment/Forging Area, Building 128
(AOC PT 10) Facing North 6/17/98

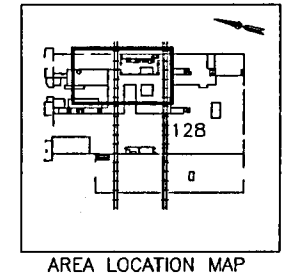
Figure 4.73-4 Quenching Tanks, Building 128 (AOC PT 10)
Facing North 6/11/98



LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
PT = PROCESS TANK

= TANKS EXISTING IN 1998
= FORMER TANK LOCATIONS PER PUBLIC WORKS DRAWING NUMBER 265,224 (1943)
= BUILDING WALL
= SOIL SAMPLING LOCATION
= SOIL AND GROUNDWATER SAMPLING LOCATION



AREA LOCATION MAP

0 5 10 15 20
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.73-5 MODIFIED BY: J. Brown PROJECT NO. 6210-014-157	SAMPLING LOCATIONS AOC PT 10 QUENCHING TANKS BUILDING 128 GROUP B AREAS OF CONCERN	FIGURE 4.73-5

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4.73-17

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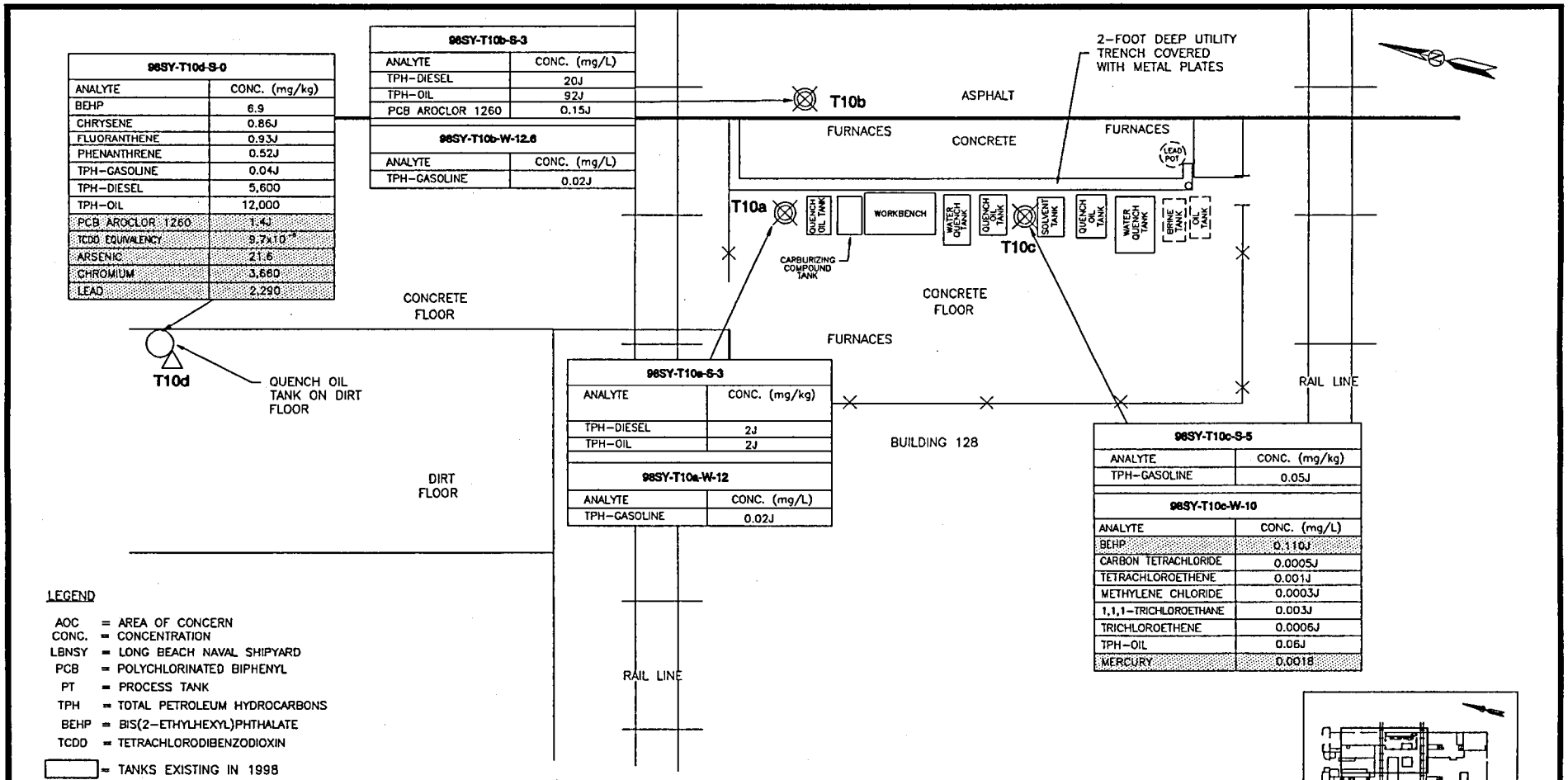

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.73-6
MODIFIED BY: J. Brown
PROJECT NO. 6210-014-157

SAMPLING RESULTS SUMMARY, JUNE 1998
AOC PT 10
QUENCHING TANKS
BUILDING 128
GROUP B AREAS OF CONCERN

FIGURE
4.73-6

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.73-18

4.74 PLASMA ARC CUTTING TANK, BUILDING 128 (AOC PT 11)

A description of the Building 128 Plasma Arc Cutting Tank (AOC PT 11), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.74.1 to 4.74.4. Based on the PA recommendations, investigational sampling was performed for this AOC. The numbers of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.74.1 Site Description

Table 4.74-1 summarizes the location and characteristics of AOC PT 11. A site map is shown in Figure 4.74-1, while a site photograph is shown in Figure 4.74-2.

Table 4.74-1
AOC PT 11 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
PT 11	Southern end of Building 128.	E-29	Plasma arc tank used for cutting sheet metal.	One sump filled with tap water, used for plasma arc cutting. One rubber bladder beneath the tank used for draining or reusing the water.	Tank capacity: 2,000 gallons. Bladder capacity: 10,000 gallon.

AOC = Area of Concern No. = Number PT = Process Tank

The plasma arc cutting tank was inspected as part of the January 1998 site reconnaissance. This AOC consists of a tank and associated bladder used for cutting sheet metal using the plasma arc cutting process and is located inside the southern part of Building 128. The bladder is located beneath the open top tank and is used to recirculate water to the open tank. The bladder has the capacity to hold 10,000 gallons of water (tap water). The open top tank is constructed of steel and has vertical steel risers on the inside of the tank for propping the sheet metal up during cutting operations. The open top tank has a capacity of 2,000 gallons of water. Both the bladder and open top tank are contained in a steel container that is 23 feet wide by 34 feet long. During the January 1998 site reconnaissance, the equipment was still in place, the contents had been drained, the tank had been cleaned, but was no longer being used and no metal slag was observed in the open tank.

4.74.2 Operational History and Waste Characteristics

Table 4.74-2 summarizes the operational history and waste characteristics of AOC PT 11.

Table 4.74-2
AOC PT 11 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
PT 11	mid 1960s or early 1970s to 1996	Cutting sheet metal using acetylene while submerged under tap water. Sheet metal plates were then used to construct structural members of ships.	Metal slag waste from the plasma arc cutting process.	Approximately six 55-gallon drums of metal slag waste generated per year.

AOC = Area of Concern No. = Number PT = Process Tank

The tank utilized computer-oriented plasma arc torches to cut steel plates for use in the fabrication of ships and other shop activities at LBNSY (Johnson, pers. comm., 1998). To reduce the intense light and smoke created during cutting, the process was performed under water. A greenish-yellow, sea marker dye was added to the water to further reduce the glare that was produced during cutting operations (SCS 1991a). The open tank was filled with approximately 1,000 gallons of water in order to cover the metal plate to be cut. The water was supplied from the 10,000-gallon bladder that was directly beneath the open tank. Cutting operations were conducted and the metal slag and cuttings were collected in the water inside the open tank. Water was recirculated from the storage bladder to the open tank between cutting operations. The water used in the previous cutting operation was returned to the bladder to allow the metal slag and cuttings to be removed from the tank.

Wastewater from the cutting operations was reportedly changed out very infrequently prior to the 1990s (Kennedy/Jenks 1993). In the 1990s, the wastewater was cleaned out every 6 to 8 months (SCS 1991a). Wastewater was discharged to the sanitary sewer through a floor drain (SCS 1991a). LBNSY-ED did not consider the wastewater from cutting operations to be hazardous because the water was continually circulated and no metal slag was discharged (pers. comm., Johnson 1998). A 1993 report on the IWTP recommended that the wastewater from the plasma-arc cutting operations be rerouted to the IWTP and that the entire volume of the water in the bladder and tank (approximately 12,000 gallons) be discharged yearly (Kennedy/Jenks 1993) because metals (including chromium, copper, nickel, zinc and lead) were detected in samples that were collected periodically (Kennedy/Jenks 1993). The connection to the IWTP was never completed. Only the metal slag and cuttings shoveled from the open tank were considered and handled as hazardous waste. Approximately six 55-gallon drums per year of slag were generated from the cutting operations (NEESA 1990).

4.74.3 Preliminary Assessment Resources

Table 4.74-3 presents the PA resources used and interviews conducted to evaluate this AOC.

Table 4.74-3
AOC PT 11 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Plasma arc cutting operations and associated waste at Building 128.
Sampling and Analysis Plan, Industrial Wastewater Discharge Study	1991	SCS Engineers	Information on the plasma arc torch cutting operations, disposal of wastewater, and potential contaminants.
Baseline Monitoring Report	1991	SCS Engineers	Discusses the operations flow process for the plasma arc cutting operation.
Industrial Wastewater and Industrial Waste Treatment Plant Control and Management Plan	1993	Kennedy/Jenks Consultants	Discussion on potential contaminants and diverting wastewater from the plasma arc cutting tank to the Industrial Wastewater Treatment Plant.
Separators, Clarifiers, and Sumps List	1997	LBNSY-ED	Location of the plasma arc torch machinery in the southern end of Building 128.
Personnel Interviews	1998	Nunn, Johnson LBNSY	Information on the operational history of the plasma arc torch machinery in Building 128.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
No. = Number
PT = Process Tank

4.74.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC PT 11 because of the possibility for spills and leaks of the wastewater in and around the tank and bladder used for plasma arc torch cutting operations. Although the wastewater from the operations was never treated as hazardous, sampling of the water in 1993 indicated that the wastewater had metals concentrations that exceeded standards for sanitary sewer discharge (Kennedy/Jenks 1993). Soil and groundwater sampling and analysis for metals was recommended in the Work Plan (CDM Federal 1998a) to assess whether wastes may have impacted soil and/or groundwater beneath the plasma arc cutting tank.

4.74.5 Number of Samples and Analyses

As described in Work Plan (CDM Federal 1998a), one soil and one groundwater sample were collected next to the tank in a direction hydraulically downgradient for groundwater. These samples were collected on 11 June 1998. Samples were analyzed for the analytical categories indicated in Table 4.74-4. The soil sample was collected at a depth of one foot below the ground surface (i.e., below the bottom of the tank). The groundwater sample was collected at a depth of 15.3 feet below ground surface, which was the depth at which groundwater was first encountered. The sampling location is shown in Figure 4.74-3.

Table 4.74-4
AOC PT 11 Number of Samples and Analyses

Matrix	Metals
Soil	1
Groundwater	1[(a)]

Notes:
(a) Dissolved Metals.
AOC = Area of Concern PT = Process Tank

4.74.6 Analytical Results

Analytical results for the AOC PT 11 soil and groundwater samples are summarized in Table 4.74-5.

4.74.6.1 Soil

As indicated on Table 4.74-5, twelve metals were detected in the soil sample.

4.74.6.2 Groundwater

As indicated on Table 4.74-5, two metals were detected in the groundwater sample: barium and molybdenum.

4.74.7 Data Comparison to Screening Criteria

No metals were detected at concentrations that exceeded their respective screening criteria.

4.74.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.74.9 Recommendations

No further action is recommended for the Plasma Arc Cutting Tank (AOC PT 11) because samples were collected but no analytes exceeded their respective screening criteria.

Table 4.74-5
AOC PT 11 Sampling Results Summary for Metals
June 1998

	SOIL						GROUNDWATER					
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Criteria	No. of Samples	No. of Detections	Dissolved Concentration (mg/L)	Screening Criteria for Water[c] (mg/L)	Background Level[b] (mg/L)	No. of Detections above Criteria
Antimony	1	0	ND	750	11.3	0	1	0	ND	1.2	0.0616	0
Arsenic	1	1	3.9	3.0	17.5	0	1	0	ND	0.008	0.0276	0
Barium	1	1	75.0	100,000	275	0	1	1	0.191J	1[d]	0.1777	0
Beryllium	1	0	ND	3,400	1.4	0	1	0	ND	$3.3x10^{-3}$	0.002	0
Cadmium	1	0	ND	930	1.7	0	1	0	ND	0.001	0.0017	0
Chromium	1	1	15.8	450	60.9	0	1	0	ND	190	0.0029	0
Cobalt	1	1	7.0	29,000	24.5	0	1	0	ND	2.2[d]	0.0071	0
Copper	1	1	12.6	70,000	798.7	0	1	0	ND	0.003	0.1072	0
Lead	1	1	5.1	1,000	185.2	0	1	0	ND	0.002	0.028	0
Mercury	1	1	0.093J	560	2.5	0	1	0	ND	$4.0x10^{-3}$	0.0009	0
Molybdenum	1	1	0.33	9,400	NA	0	1	1	0.0062	0.18[d]	NA	0
Nickel	1	1	10.4	37,000	32.6	0	1	0	ND	0.005	0.0958	0
Selenium	1	0	ND	9,400	1.4	0	1	0	ND	0.015	0.040	0
Silver	1	1	0.060J	9,400	1.5	0	1	0	ND	0.0007	0.0072	0
Thallium	1	0	ND	150	4.2	0	1	0	ND	0.014	0.0075	0
Vanadium	1	1	31.0	13,000	84.9	0	1	0	ND	0.26[d]	0.0107	0
Zinc	1	1	40.4	100,000	844.9	0	1	0	ND	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams per Liter
PRG = Preliminary Remediation Goal
PT = Process Tank
ND = Not Detected
No. = Number
U.S. EPA = United States Environmental Protection Agency

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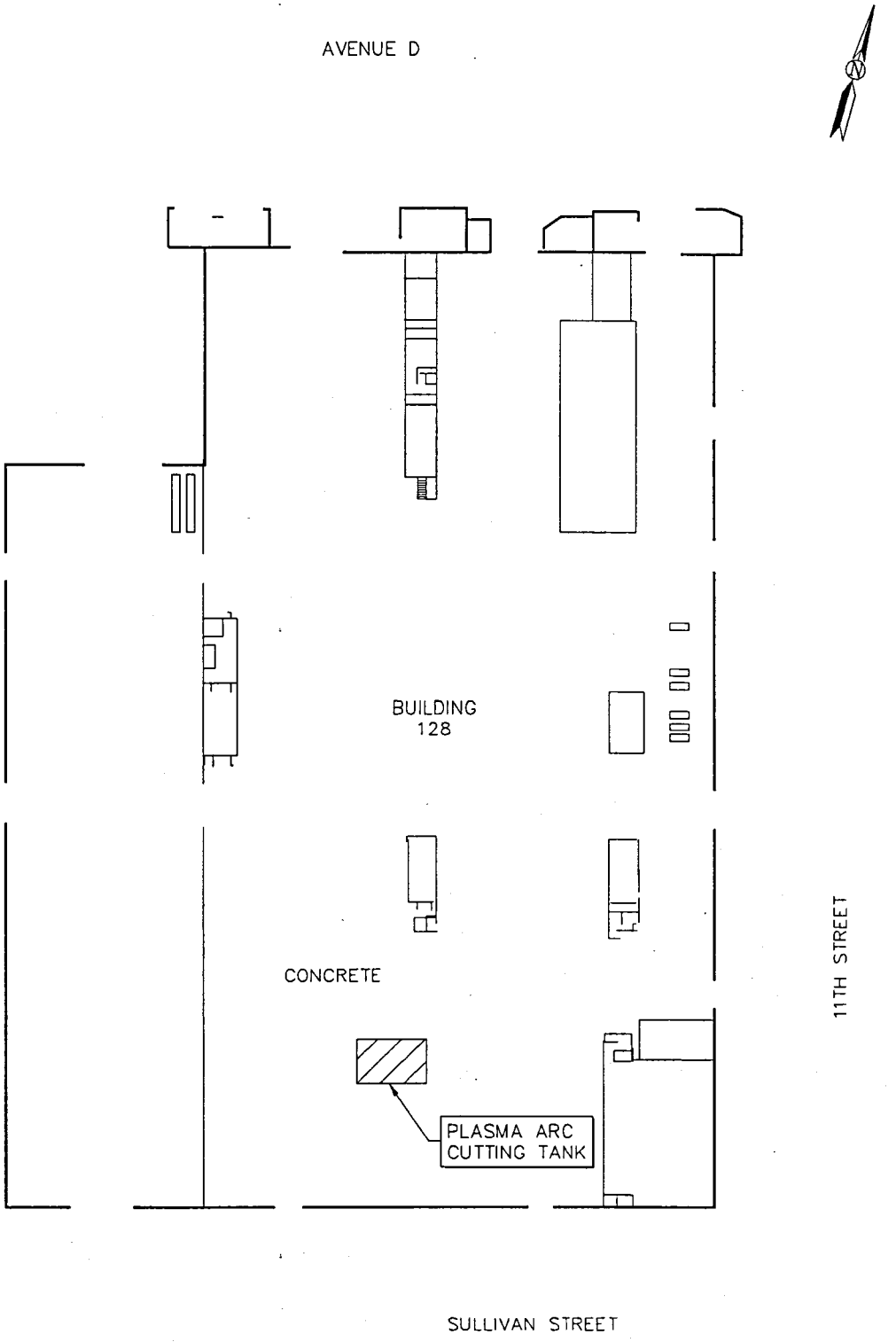

LEGEND

AOC = AREA OF CONCERN
PT = PROCESS TANK

0 50 100

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC PT 11 PLASMA ARC CUTTING TANK BUILDING 128	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.74-1		4.74-1
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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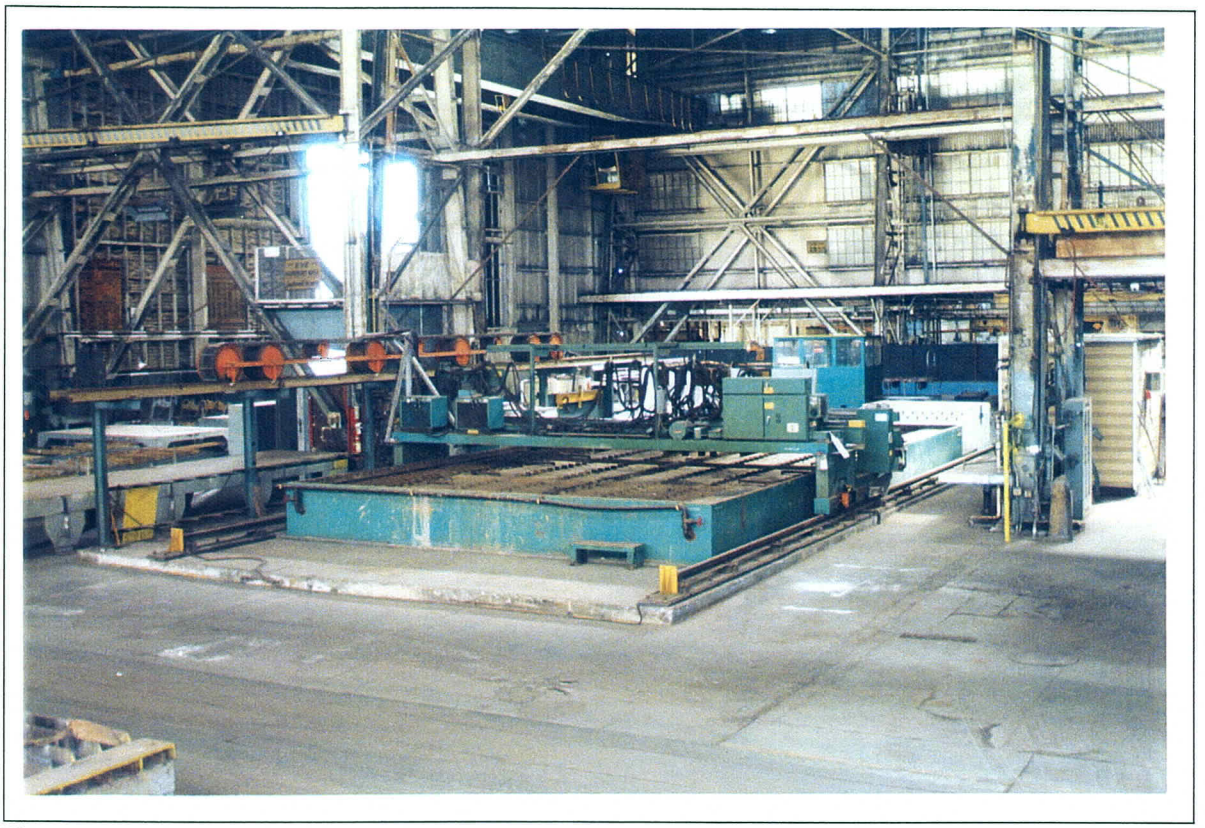
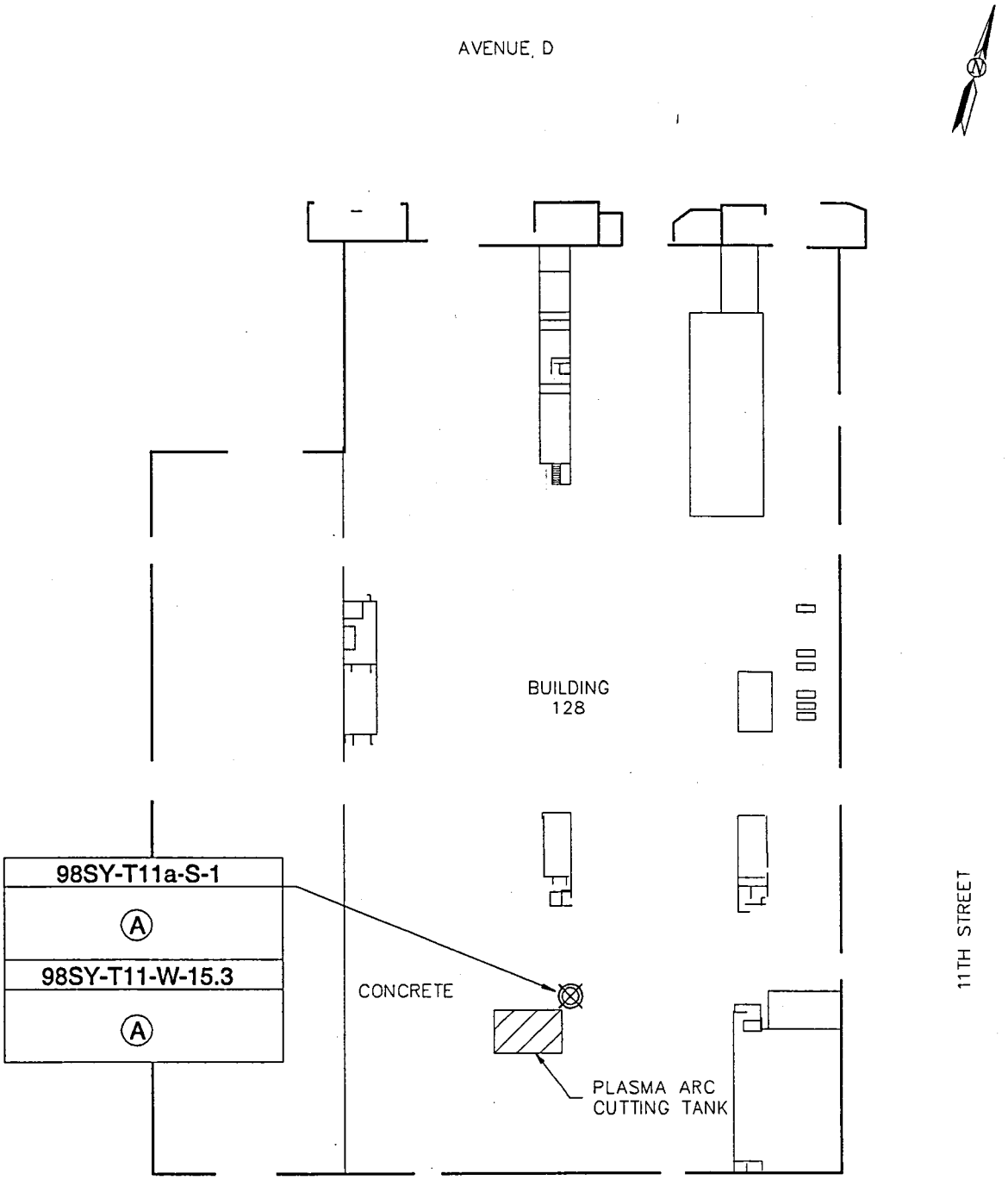


Figure 4.74-2 Plasma Arc Cutting Tank, Building 128 (AOC PT 11) Facing Southwest 6/17/98



98SY-T11a-S-1 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE P = WATER SAMPLE
WHERE 1 = DEPTH BELOW GROUND SURFACE (FEET)

(A) = NO ORGANICS DETECTED, AND NO METALS ABOVE SCREENING CRITERIA.

LEGEND

AOC = AREA OF CONCERN
PT = PROCESS TANK
⊗ = GROUNDWATER AND SOIL SAMPLE LOCATION

0 50 100

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING RESULTS SUMMARY, JUNE 1998 AOC PT 11 PLASMA ARC CUTTING TANK BUILDING 128 GROUP B AREAS OF CONCERN	FIGURE 4.74-3
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.74-3		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 2 of 6

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

Prepared by:

CDM FEDERAL PROGRAMS CORPORATION
3760 Convoy Street, Suite 210
San Diego, California 92111

14 April 2000

4.75 to 4.81 SATELLITE ACCUMULATION POINTS, BUILDING 52 (AOCs SAP 9 through SAP 15)

A description of Building 52 and associated Satellite Accumulation Points (AOCs SAP 9 through SAP 15), the building's operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.75.1 to 4.75.4. All seven SAPs located in Building 52 (AOCs SAP 9 through SAP 15, numbered 75 to 81 in Tables 1-1 and 4.75-1) are addressed in this section.

4.75.1 Site Description

Table 4.75-1 summarizes the location and characteristics of AOCs SAP 9 through SAP 15. A site map is provided as Figure 4.75-1. Site photographs are shown in Figures 4.75-2 to 4.75-8.

Building 52 was constructed in 1943 and designated as the Transmitter Building; it later became the QA Office and Laboratory for LBNSY. The building is approximately 3,460 square feet in size and was observed during the March 1998 site reconnaissance to contain general office space, an X-ray shooting area, an X-ray dark room, a storage area, and an operations area. Outside the building, SAP placards were identified. SAPs were organized by Navy identification number shown in Table 4.75-1 as SAP ID number.

The QA department was divided into three divisions: Petroleum and General Chemistry; Metallurgical and Materials; and Environmental Testing. The Petroleum and General Chemistry laboratory tested oils, JP-5 jet fuel, greases, and other petroleum products for military specifications. The Metallurgical and Materials laboratory tested metallic samples for purity and composition. The Environmental Testing laboratory tested hazardous waste samples to determine appropriate disposal methods, certified materials from other LBNSY activities, and determined the shelf-life on unopened containers (NEESA 1990).

Seven Group B AOC SAPs were located at Building 52 and were used in association with the activities conducted within the building. During the March 1998 site reconnaissance, Building 52 was no longer in use and the SAP drums were no longer in place.

Table 4.75-1
AOCs SAP 9 through SAP 15 Site Descriptions

Table 1-1 Tab No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
75	SAP 9	52-92-1	Building 52	E-22	Small-volume SAP for empty aerosol (paint) cans.	Metal drum.	55-gallons.
76	SAP 10	52-92-2	Building 52	E-22	Small-volume SAP for X-ray film development waste.	Plastic Drum.	55-gallons.
77	SAP 11	52-92-3	Building 52	E-22	Small-volume SAP for empty aerosol cans (oil base).	Metal drum.	55-gallons.
78	SAP 12	52-92-4	Building 52	E-22	Small-volume SAP for empty aerosol cans (solvent base).	Metal drum.	55-gallons.
79	SAP 13	52-92-5	Building 52	E-22	Small-volume SAP for waste flashlight batteries.	Metal drum.	55-gallons.
80	SAP 14	52-92-7	Building 52	E-22	Small-volume SAP for VP-30 penetrant rinse water.	Plastic drum.	55-gallons.
81	SAP 15	52-92-9	Building 52	E-22	Small-volume SAP for X-ray film processing waste.	Plastic drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

Trenches located outside Building 52 are addressed as part of AOC MISC 8 (see Section 4.59).

4.75.2 Operational History and Waste Characteristics

Table 4.75-2 summarizes the operational history and waste characteristics for AOCs SAP 9 through SAP 15.

Table 4.75-2
AOCs SAP 9 through SAP 15 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 9	1993 to 1996	Storage of small amounts of wastes.	Empty aerosol paint cans.	10 pounds, 55-gallon drum maximum at any one time.
SAP 10	1993 to 1996	Storage of small amounts of wastes.	X-ray film development waste.	300 pounds, 55-gallon drum maximum at any one time. Stored on a plastic secondary containment pallet.
SAP 11	1993 to 1996	Storage of small amounts of wastes.	Empty aerosol cans, oil base.	60 pounds, 55-gallon drum maximum at any one time.
SAP 12	1993 to 1996	Storage of small amounts of wastes.	Empty aerosol cans, solvent base.	70 pounds, 55-gallon drum maximum at any one time.
SAP 13	1995 to 1996	Storage of small amounts of wastes	Waste flashlight batteries. Sizes from A to D cell.	10 pounds.
SAP 14	1995 to 1996	Storage of small amounts of wastes.	Penetrant rinse water.	55-gallons.
SAP 15	1995 to 1996	Storage of small amounts of wastes.	X-ray film processing waste.	150 gallons, 55-gallon maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

As of the 1990s, Building 52 was used to test petroleum products for quality standards, metallic samples for purity and composition, and any environmentally related materials requiring proper disposal (NEESA 1990). According to a 1990 Comprehensive Hazardous Waste Minimization Survey by NEESA, Building 52 operations required the use of hazardous materials. The materials were stored in material storage areas if unused, while hazardous wastes were stored at SAPs prior to disposal. The SAPs in Building 52 were used from 1993 to 1996 and consisted of accumulated aerosol cans, batteries, X-ray process and developing wastes, and VP-penetrant rinse water. Building 52, as well as several other buildings, was radiologically released for unrestricted use by the *Decommissioning Radiological Survey and Remediation Report for Long Beach Naval Complex* (Digital Systems International Corporation 1998). Table 4.75-2 summarizes the operational history and waste characteristics for the Building 52 SAPs.

4.75.3 Preliminary Assessment Resources

Table 4.75-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.75-3
AOCs SAP 9 through SAP 15 Preliminary Assessment Resources Summary

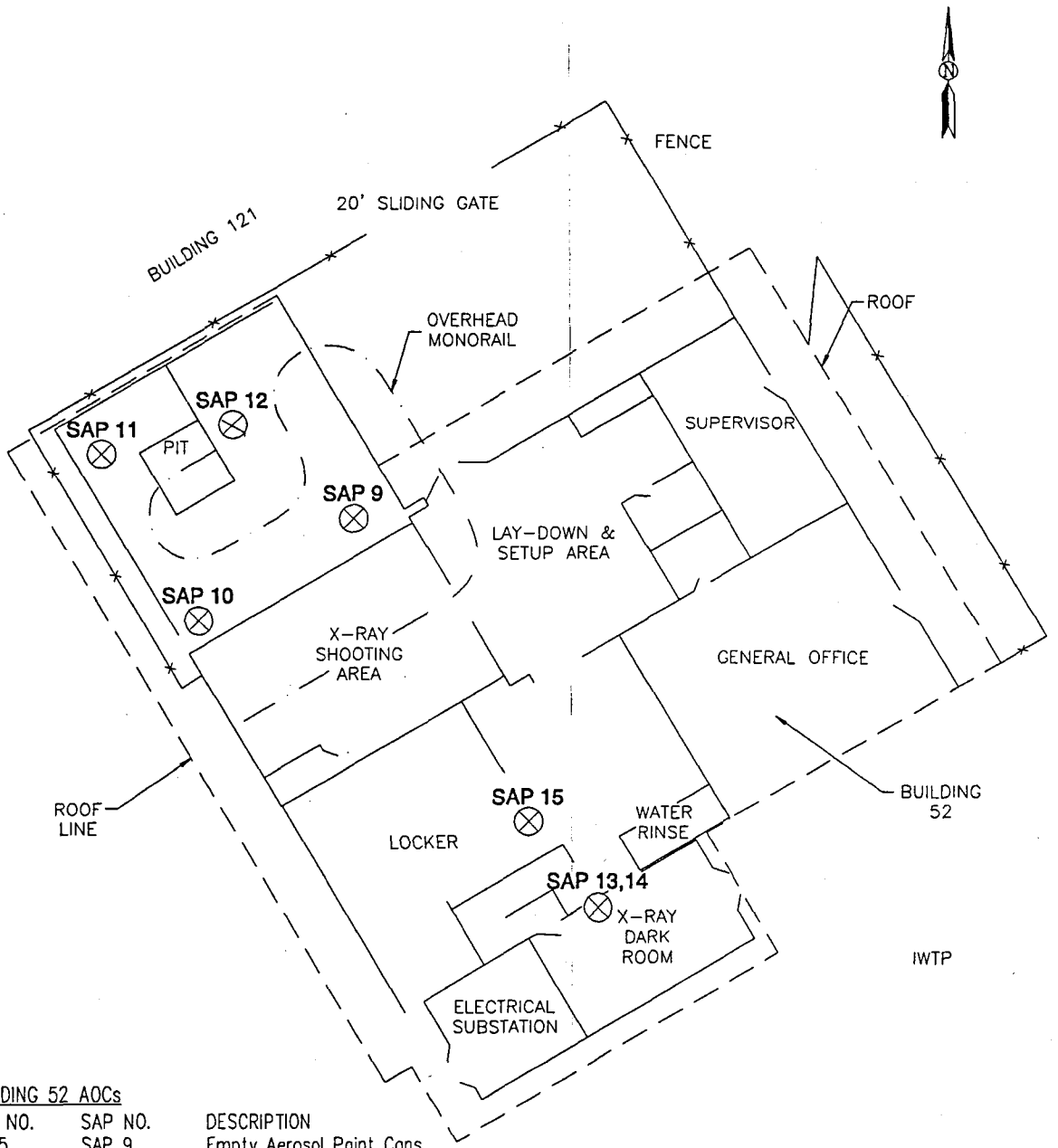
Resource	Date	Source	Summary
Environmental Engineering Survey	1977	CDM, Inc.	Wastewater discharges from Building 52 operations.
Spill Log	1988 to 1996	LBNSY-ED	Indicates no spills at Building 52.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 52 operations and wastes generated.
Industrial Wastewater Discharge Study	1991	SCS Engineers	Industrial wastewater generated at Building 52.
SAP Files	1993	LBNSY-ED	Initiation date of Building 52 SAPs.
EBS	1996	LBNSY-ED	Provides general structural information concerning Building 52, Public Works Property Record.
Decommissioning Radiological Survey and Remediation Report for Long Beach Naval Complex	1998	Digital Systems International Corporation	Building 52, as well as several other buildings, was radiologically released for unrestricted use.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 52 operations.

AOC = Area of Concern
CDM Inc. = Camp, Dresser, & McKee Inc.
EBS = Environmental Baseline Survey
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point

4.75.4 PA Recommendations

No further action is recommended for AOCs SAP 9 through SAP 15, based on the following findings:

- The SAPs were operated for only 1 to 3 years;
- They were located on pavement inside a covered building;
- Proper containment was used;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No floor staining was observed.



BUILDING 52 AOCs

TAB NO.	SAP NO.	DESCRIPTION
75	SAP 9	Empty Aerosol Paint Cans
76	SAP 10	X-Ray Film Development Waste
77	SAP 11	Empty Aerosol Cans, Oil Base
78	SAP 12	Empty Aerosol Cans, Solvent Base
79	SAP 13	Batteries
80	SAP 14	VP-30 Penetrant Rinse Water
81	SAP 15	Film Processing Waste

LEGEND

AOC = AREA OF CONCERN
SAP = SATELLITE ACCUMULATION POINT
IWTP = INDUSTRIAL WASTEWATER TREATMENT PLANT
SAP 15 ⊗ = SAP LOCATION AND NUMBER

0 20
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SAPs 9 THROUGH 15 SATELLITE ACCUMULATION POINTS BUILDING 52	FIGURE 4.75-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.75-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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Figure 4.75-2 AOCs SAP 9 through SAP 15 Location, Building 52 Facing Southwest 2/12/98

Figure 4.75-3 Satellite Accumulation Point (AOC SAP 9), Building 52 Facing South 3/12/98

Figure 4.75-4 Satellite Accumulation Point (AOC SAP 10), Building 52 Facing West 3/12/98

Figure 4.75-5 Satellite Accumulation Point (AOC SAP 11), Building 52 Facing Northwest 3/12//98

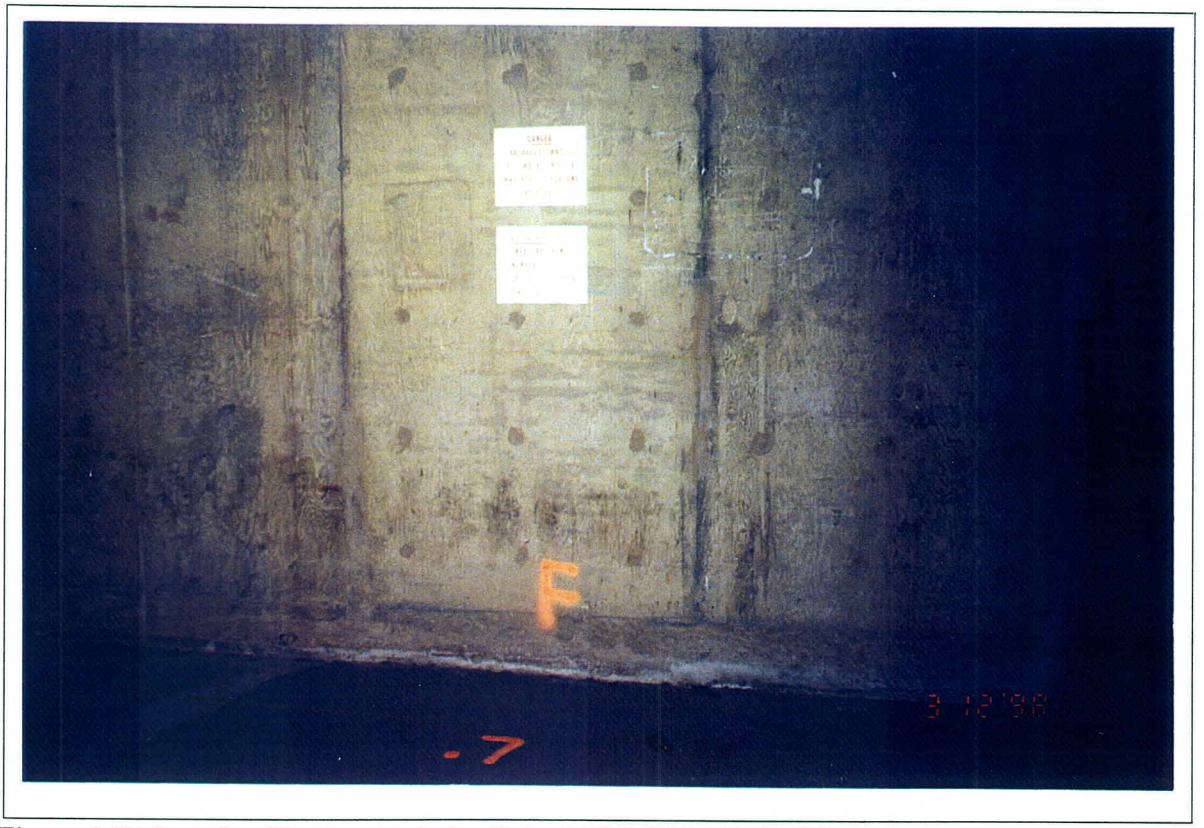


Figure 4.75-6 Satellite Accumulation Point (AOC SAP 12), Building 52 Facing West 3/12/98

Figure 4.75-7 Satellite Accumulation Point (AOC SAPs 13, 14), Building 52, Empty Containers and Spill Containment Pallet, Facing East 3/12/98

Figure 4.75-8 Satellite Accumulation Point (AOC SAP 15), Building 52, Miscellaneous Equipment not Associated with AOC 15, Facing South 3/12/98

4.82 to 4.89 SATELLITE ACCUMULATION POINTS, BUILDING 54 (AOCs SAP 16 through SAP 23)

A description of Satellite Accumulation Points located at or near Building 54 (AOCs SAP 16 through SAP 23), the building and SAP operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.82.1 to 4.82.4. Seven SAPs (numbered 82 to 88 in Tables 1-1 and 4.82-1) located in Building 54, as well as one nearby SAP (numbered 89 in Tables 1-1 and 4.82-1) are addressed in this section.

4.82.1 Site Description

Seven Group B AOC SAPs (SAP 16 through SAP 22) located in Building 54 and one outside Building 122 (SAP 23) were used in association with the activities conducted at the buildings. During the March 1998 site reconnaissance, Buildings 54 and 122 were no longer in use and the SAP drums were no longer in place. Table 4.82-1 summarizes the location and characteristics of AOCs SAP 16 through SAP 23. A site map is provided as Figure 4.82-1. Site photographs are shown in Figures 4.82-2 to 4.82-4.

Table 4.82-1
AOCs SAP 16 through SAP 23 Site Descriptions

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
82	SAP 16	54-457-1	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for waste grease.	Metal drum.	55-gallons.
83	SAP 17	54-457-2	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for recyclable oil.	Metal drum.	55-gallons.
84	SAP 18	54-457-3	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for waste solvent.	Metal drum.	55-gallons.
85	SAP 19	54-457-4	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for recyclable antifreeze.	Metal drum.	55-gallons.
86	SAP 20	54-457-5	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for waste fuel filters.	Metal drum.	55-gallons.
87	SAP 21	54-457-6	Building 54, 1st floor, column B-2	C-22, D-22	Small volume SAP for waste transmission fluid.	Metal drum.	55-gallons.
88	SAP 22	54-457-8	Building 54, 1st floor, column B-8	C-22, D-22	Small volume SAP for recyclable dirty rags.	Metal drum.	55-gallons.
89	SAP 23	54-980-1	South end of Building 122.	D-21	Small volume SAP for waste grease.	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

Building 54 was built in 1945 for use as the Transportation Shop for LBNSY. The building had a main floor for repair and maintenance activities and a mezzanine floor for additional offices. The work area of Building 54 was approximately 40,248 square feet and was used for vehicle maintenance and tire repair and replacement activities for Naval Shipyard vehicles (NEESA 1983). The first floor of the building had oil change and lubrication pits, as well as eight cranes to assist in repair and maintenance activities for heavy transportation equipment. Building 54 also had a battery shop in the southeastern corner of the building (Archiplan 1988). Building 122 was used for general maintenance including a former steam-cleaning operation located outside the eastern side of the building.

Seven SAPs were located in Building 54 (SAP 16 through SAP 22) and were used for collection of waste and recyclable liquids, grease, fuel filters, and recyclable dirty rags. One SAP was located outside Building 122 and was used for storing waste grease from steam-cleaning operations.

Four additional AOCs associated with Building 54 (AOCs HWF 4, HWF 13, IWS 6, and MISC 8) were investigated. AOC HWF 4 is a less than 90-day hazardous materials storage facility, AOC HWF 13 is a less than 180-day hazardous waste storage facility for batteries, and IWS 6 is an oil/water separator connected to a car wash in the transportation yard, and AOC MISC 8 is the transportation facility yard including Building 54. These AOC are addressed in Sections 4.32, 4.38, 4.51, and 4.60 of this report, respectively.

4.82.2 Operational History and Waste Characteristics

Table 4.82-2 summarizes the operational history and waste characteristics for the AOCs SAP 16 through SAP 23.

Table 4.82-2
AOCs SAP 16 through SAP 23 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 16, Bldg. 54	1995 to 1997	Small amounts of waste grease generated from automobile repairs and maintenance.	Waste grease.	Approximately 1000 pounds, 55-gallon drum maximum at any one time.
SAP 17, Bldg. 54	1995 to 1997	Small amounts of recyclable oil generated from automobile repairs and maintenance.	Recyclable oil.	Approximately 2000 gallons, 55-gallon drum maximum at any one time.
SAP 18, Bldg. 54	1995 to 1997	Small amounts of waste solvent generated from automobile repairs and maintenance.	Waste solvent.	Approximately 55 gallons, 55-gallon drum maximum at any one time.
SAP 19, Bldg. 54	1995 to 1997	Small amounts of recyclable antifreeze generated from automobile repairs and maintenance.	Recyclable antifreeze.	Approximately 1000 gallons, 55-gallon drum maximum at any one time.
SAP 20, Bldg. 54	1995 to 1997	Small amounts of waste fuel filters generated from automobile repairs and maintenance.	Waste fuel filters.	Approximately 1000 pounds, 55-gallon drum maximum at any one time.
SAP 21, Bldg. 54	1995 to 1997	Small amounts of waste transmission fluid generated from automobile repairs and maintenance.	Waste transmission fluid.	Approximately 200 gallons, 55-gallon drum maximum at any one time.
SAP 22, Bldg. 54	1995 to 1997	Small amounts of recyclable dirty rags generated from automobile repairs and maintenance.	Recyclable dirty rags.	Approximately 2000 pounds, 55-gallon drum maximum at any one time.
SAP 23, Bldg. 122	1995 to 1997	Small amounts of waste grease generated from steam washing activities.	Waste grease.	Approximately 55 gallons, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

Building 54 generated waste antifreeze, lubricants, brake cleaner, solvents, and rags from maintenance activities. A majority of the oil waste was reportedly disposed of at the Boat Disposal Location (IR Site 6) from the 1940s to 1957 (NEESA 1983). Between 1957 and 1965, waste disposal practices are unknown. Since 1965, waste oil was brought to Pier 6 for removal by an outside contractor and other wastes were disposed of offsite by a contractor (NEESA 1983 and NEESA 1990). Since 1995, shop wastes were temporarily stored at the SAPs. Samples were taken from the SAP drum contents and sent to the laboratory in Building 52 for analysis, then SAP contents were disposed offsite by a contractor based on these laboratory results. The SAPs located in Building 54 were operated from 1995 to 1997. The spill log indicates two reported spills at Building 54; 15 gallons of gasoline spilled at the northeastern corner of Building 54 in 1989, and 40 gallons of diesel fuel spilled at the western

side of Building 54 in 1991 (see Appendix B). These spills were likely contained and cleaned up according to Navy procedures; these spills may not have been associated with the SAPs.

4.82.3 Preliminary Assessment Resources

Table 4.82-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.82-3
AOCs SAP 16 through SAP 23 Preliminary Assessment Resources Summary

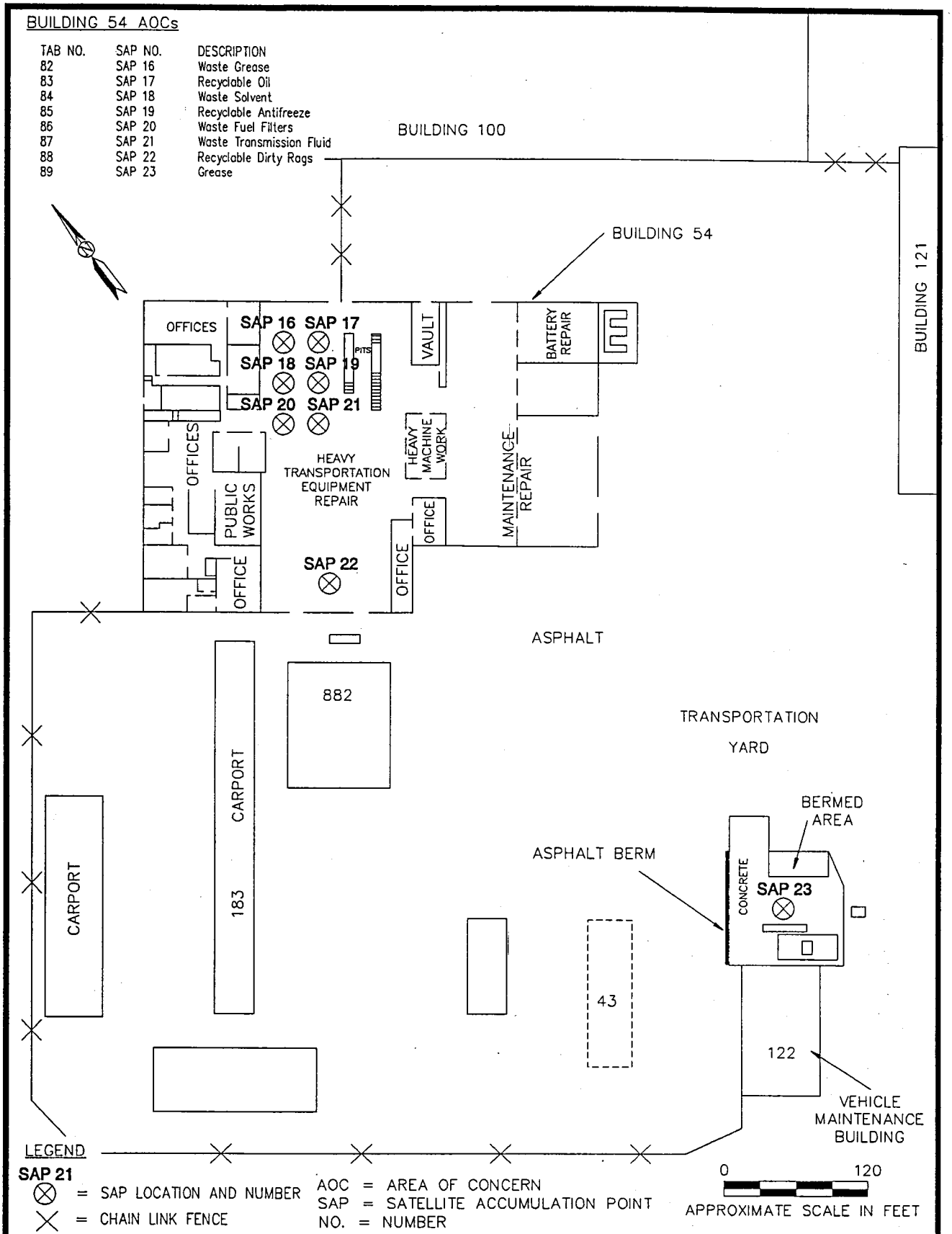
Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	Waste oil disposal at Building 54.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at the Building 54 Transportation Yard.
Update of Environmental Evaluation	1988	Archiplan Urban Design Collaborative	Building 54 layout (e.g., hydraulic lifts, sumps).
Spill Log	1988 to 1996	LBNSY-ED	Indicates two spills at Building 54.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 54 operations and wastes generated.
Weekly SAP Inspection Forms	1995 to 1997	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1995	LBNSY-ED	Initiation date of Building 54 SAPs.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 54 operations.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = *Satellite Accumulation Point*

4.82.4 PA Recommendations

No further action is recommended for AOCs SAP 16 through SAP 23 based on the following findings:

- The SAPs were operated for only 2 years;
- The seven SAPs at Building 54 were inside a covered building;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No floor staining was observed.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SAPs 16 THROUGH 23 SATELLITE ACCUMULATION POINTS BUILDINGS 54 AND 122 GROUP B AREAS OF CONCERN	FIGURE 4.82-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.82-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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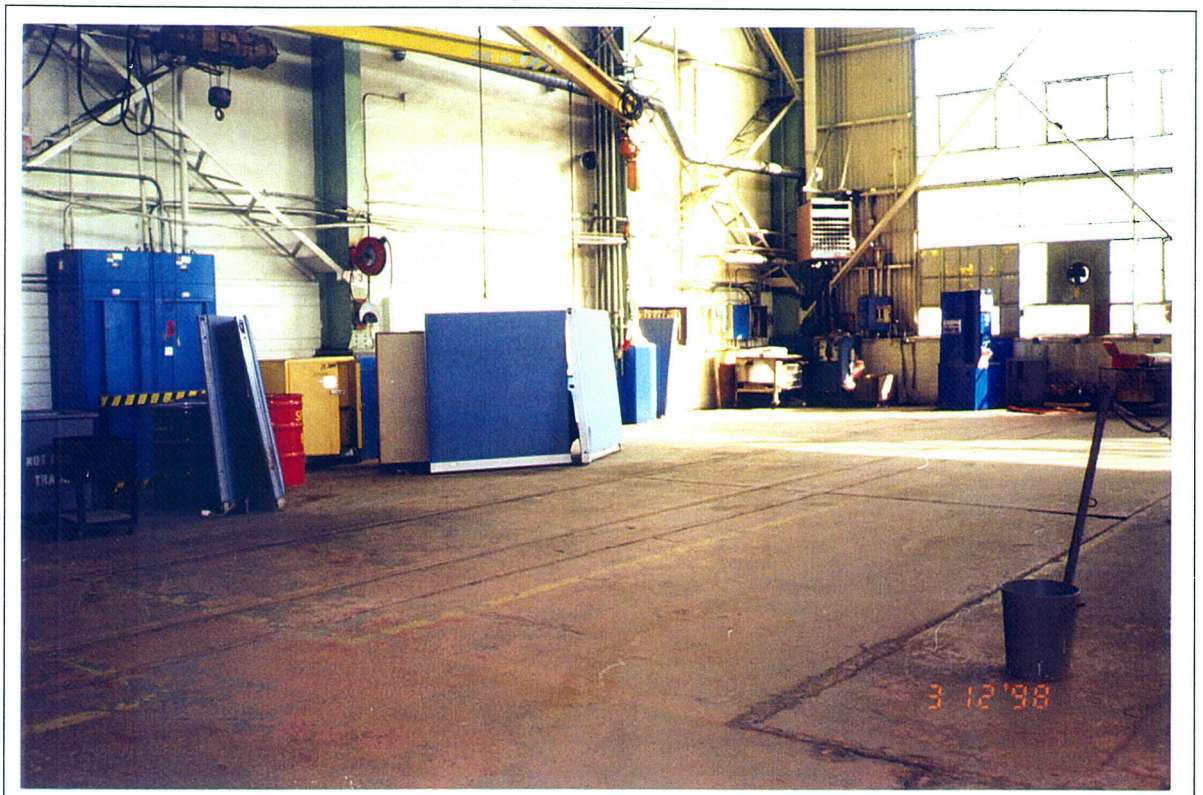


Figure 4.82-2 Satellite Accumulation Points (AOCs SAP 16 to 21), Building 54 Facing Northeast 3/12/98

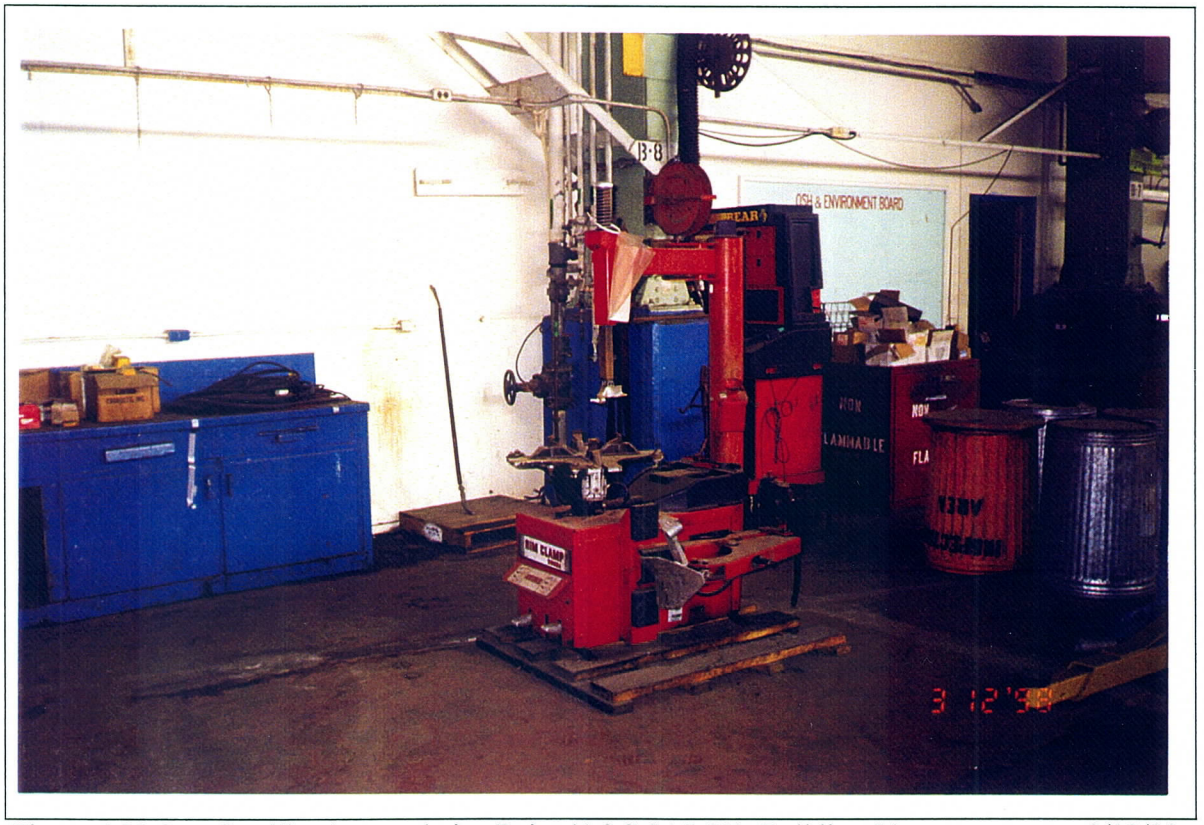


Figure 4.82-3 Satellite Accumulation Point (AOC SAP 22), Building 54 Facing North 3/12/98

Figure 4.82-4 Satellite Accumulation Point (AOC SAP 23), Building 122 Facing Southwest 3/12/98

4.90 to 4.109 SATELLITE ACCUMULATION POINTS, BUILDING 128 (AOCs SAP 25 through SAP 44)

A description of the Satellite Accumulation Points located in Building 128 (AOCs SAP 25 through SAP 44), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.90.1 to 4.90.4. All twenty SAPs located in Building 128 (AOCs SAP 25 through SAP 44, numbered 90 to 109 in Tables 1-1 and 4.90-1) are addressed in this section.

4.90.1 Site Description

Twenty SAPs were located in Building 128 and used in association with the activities conducted within the building. During the March 1998 site reconnaissance, Building 128 was no longer in use and the drums at AOCs SAP 25 through SAP 44 were no longer in place. Table 4.90-1 summarizes the location and characteristics of AOCs SAP 25 through SAP 44. A site map is provided as Figure 4.90-1. Site photographs are shown in Figure 4.90-2 to Figure 4.90-15.

Building 128 was built in 1945 to provide manufacturing services for ships at LBNSY. Building 128 housed the materials and machinery to fabricate, assemble, and install structural members of ships.

Building 128 operations generated various types and amounts of hazardous wastes that were stored in SAPs for up to 90 days. Large scale hydraulic equipment used in ship member fabrication operations utilized oil products, such as lubricating oils and hydraulic fluids. A series of quenching tanks, located in the eastern and northeastern parts of the building, generated spent quench oils and degreasers. Welding processes generated metal slag waste. The foundry, forge, and heat treatment areas generated wastes such as used glass beads, spent oil-based aerosol cans, metal slag, and sandblast grit. SAPs were located throughout the building and used from 1993 to 1997 for storing wastes and spill clean-up materials from Building 128.

Four additional AOCs associated with Building 128 (AOCs MISC 1, MISC 5, PT 10, and PT 11) were investigated independently of the SAPs and are addressed in Sections 4.53, 4.57, 4.73, and 4.74 of this report, respectively. AOC MISC 1 includes the wood block flooring of Building 128, and AOC MISC 5 includes the dirt floor-forging/heat treatment area. AOC PT 10 includes quenching tanks used during heat treatment operations, and AOC PT 11 includes the plasma arc cutting tank inside the southern end of Building 128.

Table 4.90-1
AOCs SAP 25 through SAP 44 Site Descriptions

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
90	SAP 25	128-11-13	Building 128, Column D-23	C to F-28 to 30	Small volume SAP for empty aerosol penetrant, lube cans.	Metal drum.	55-gallon.
91	SAP 26	128-11-16	Building 128, Column B-23.	C to F-28 to 30	Small volume SAP for waste oil and water.	Metal drum.	55-gallon.
92	SAP 27	128-41-10	Building 128, Column D-9	C to F-28 to 30	Small volume SAP for aerosol cans (solvent).	Metal drum.	55-gallon.
93	SAP 28	128-41-6	Building 128, Column D-9.	C to F-28 to 30	Small volume SAP for metal dust.	Metal drum.	55-gallon.
94	SAP 29	128-41-7	Building 128, Column D-9	C to F-28 to 30	Small volume SAP for sandblast grit.	Metal drum.	55-gallon.
95	SAP 30	128-11-19	Building 128, Column D-17.	C to F-28 to 30	Small volume SAP for oily rags.	Metal drum.	55-gallon.
96	SAP 31	128-11-15	Building 128, Column B-27	C to F-28 to 30	Small volume SAP for empty aerosol cans (paint).	Metal drum.	55-gallon.
97	SAP 32	128-11-17	Building 128, Column B-19	C to F-28 to 30	Small volume SAP for Safe Step with oil.	Metal drum.	55-gallon.
98	SAP 33	128-11-14	Building 128, Column B-27.	C to F-28 to 30	Small volume SAP for oily rags.	Metal drum.	55-gallon.
99	SAP 34	128-11-21	Building 128, Column E-19.	C to F-28 to 30	Small volume SAP for floor sweepings with contaminated metal dust.	Metal drum.	55-gallon.
100	SAP 35	128-11-22	Building 128, Column C-23 to C-25.	C to F-28 to 30	Small volume SAP for CM-100 dry sludge.	Metal drum.	55-gallon.
101	SAP 36	128-11-23	Building 128, Column C-23 to C-25.	C to F-28 to 30	Small volume SAP for CM-100 dry sludge.	Metal drum.	55-gallon.
102	SAP 37	128-41-12	Building 128, Column B-11.	C to F-28 to 30	Small volume SAP for used glass bead dust (sandblast).	Metal drum.	55-gallon.
103	SAP 38	128-41-14	Building 128, Column E-5.	C to F-28 to 30	Small volume SAP for exhaust ventilation debris.	Metal drum.	55-gallon.
104	SAP 39	128-41-2	Building 128, Column D-9.	C to F-28 to 30	Small volume SAP for aerosol cans (oil-base).	Metal drum.	55-gallon.
105	SAP 40	128-41-23	Building 128, Column E-5.	C to F-28 to 30	Small volume SAP for exhaust ventilation debris.	Metal drum.	55-gallon.
106	SAP 41	128-41-4	Building 128, Column D-9.	C to F-28 to 30	Small volume SAP for metal slag.	Metal drum.	55-gallon.
107	SAP 42	128-41-5	Building 128, Column D-9.	C to F-28 to 30	Small volume SAP for used core sand.	Metal drum.	55-gallon.
108	SAP 43	128-41-8	Building 128, Column D-9.	C to F-28 to 30	Small volume SAP for used absorbent.	Metal drum.	55-gallon.
109	SAP 44	128-41-9	Building 128, Tube and Fabrication Section.	C to F-28 to 30	Small volume SAP for aerosol cans (paint).	Metal drum.	55-gallon.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

During the March 1998 site reconnaissance, the approximate SAP locations were inspected. The SAPs were no longer in use, and no evidence of staining was found.

4.90.2 Operational History and Waste Characteristics

Table 4.90-2 summarizes the operational history and waste characteristics for AOCs SAP 25 through SAP 44.

Table 4.90-2
AOCs SAP 25 through SAP 44 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 25	1993 to 1997	Storage of small amounts of wastes.	Empty aerosol penetrant, lube cans.	120 pounds, 55-gallon drum maximum at any one time.
SAP 26	1993 to 1997	Storage of small amounts of wastes.	Waste oil and water.	60 gallons, 55-gallon drum maximum at any one time.
SAP 27	1993 to 1997	Storage of small amounts of wastes.	Aerosol cans (solvent).	93 pounds, 55-gallon drum maximum at any one time.
SAP 28	1993 to 1997	Storage of small amounts of wastes.	Metal dust.	592 pounds, 55-gallon drum maximum at any one time.
SAP 29	1993 to 1997	Storage of small amounts of wastes.	Sand blast grit.	981 pounds, 55-gallon drum maximum at any one time.
SAP 30	1993 to 1997	Storage of small amounts of wastes.	Oily rags.	2,100 pounds, 55-gallon drum maximum at any one time.
SAP 31	1993 to 1997	Storage of small amounts of wastes.	Empty aerosol paint cans.	1,500 pounds, 55-gallon drum maximum at any one time.
SAP 32	1993 to 1997	Storage of small amounts of wastes.	Safe Step with oil.	1,200 pounds, 55-gallon drum maximum at any one time.
SAP 33	1993 to 1997	Storage of small amounts of wastes.	Oily rags.	2,100 pounds, 55-gallon drum maximum at any one time.
SAP 34	1993 to 1997	Storage of small amounts of wastes.	Floor sweepings with contaminated metal dust.	600 pounds, 55-gallon drum maximum at any one time.
SAP 35	1993 to 1997	Storage of small amounts of wastes.	CM-100 dry sludge.	9,000 pounds, 55-gallon drum maximum at any one time.
SAP 36	1996 to 1997	Storage of small amounts of wastes.	CM-100 dry sludge.	9,000 pounds, 55-gallon drum maximum at any one time.
SAP 37	1993 to 1997	Storage of small amounts of wastes.	Used glass bead dust (sandblast).	412 pounds, 55-gallon drum maximum at any one time.
SAP 38	1995 to 1997	Storage of small amounts of wastes.	Exhaust ventilation debris.	Annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 39	1993 to 1997	Storage of small amounts of wastes.	Aerosol paint cans (oil based).	71 pounds, 55-gallon drum maximum at any one time.
SAP 40	1995 to 1997	Storage of small amounts of wastes.	Exhaust ventilation debris.	Annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 41	1993 to 1997	Storage of small amounts of wastes.	Metal slag.	4,715 pounds, 55-gallon drum maximum at any one time.
SAP 42	1993 to 1997	Storage of small amounts of wastes.	Used core sand.	5,683 pounds, 55-gallon drum maximum at any one time.
SAP 43	1993 to 1997	Storage of small amounts of wastes.	Used absorbent.	3,202 pounds, 55-gallon drum maximum at any one time.
SAP 44	1993 to 1997	Storage of small amounts of wastes.	Aerosol paint cans.	176 pounds, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

Building 128 generated small amounts of empty aerosol cans, penetrant, lube and waste oil, metal dust, sandblast grit, oily rags, sludge, exhaust ventilation debris, and used absorbent in the 1990s that were temporarily stored in 55-gallon drums at SAPs

The EBS spill log maintained from 1988 to 1996 reported four spills at Building 128: 25 gallons of hydraulic fluid spilled at the northeastern corner of Building 128 in 1990; 2 gallons of hydraulic fluid spilled at Building 128 in 1993; 4 gallons of hydraulic fluid spilled at Building 128 in 1993; and 5 gallons of hydraulic fluid spilled at the southeastern corner of Building 128 in 1995 (see Appendix B). These spills were not associated with the SAPs. These spills were likely contained and cleaned up according to Navy procedures.

4.90.3 Preliminary Assessment Resources

Table 4.90-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.90-3
AOCs SAP 25 through SAP 44 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 128.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at Building 128.
Spill Log	1988 to 1996	LBNSY-ED	Indicates four spills at Building 128.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 128 operations and wastes generated.
Weekly SAP Inspection Forms	1993 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1993	LBNSY-ED	Initiation date of Building 128 SAPs.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 128 operations.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point

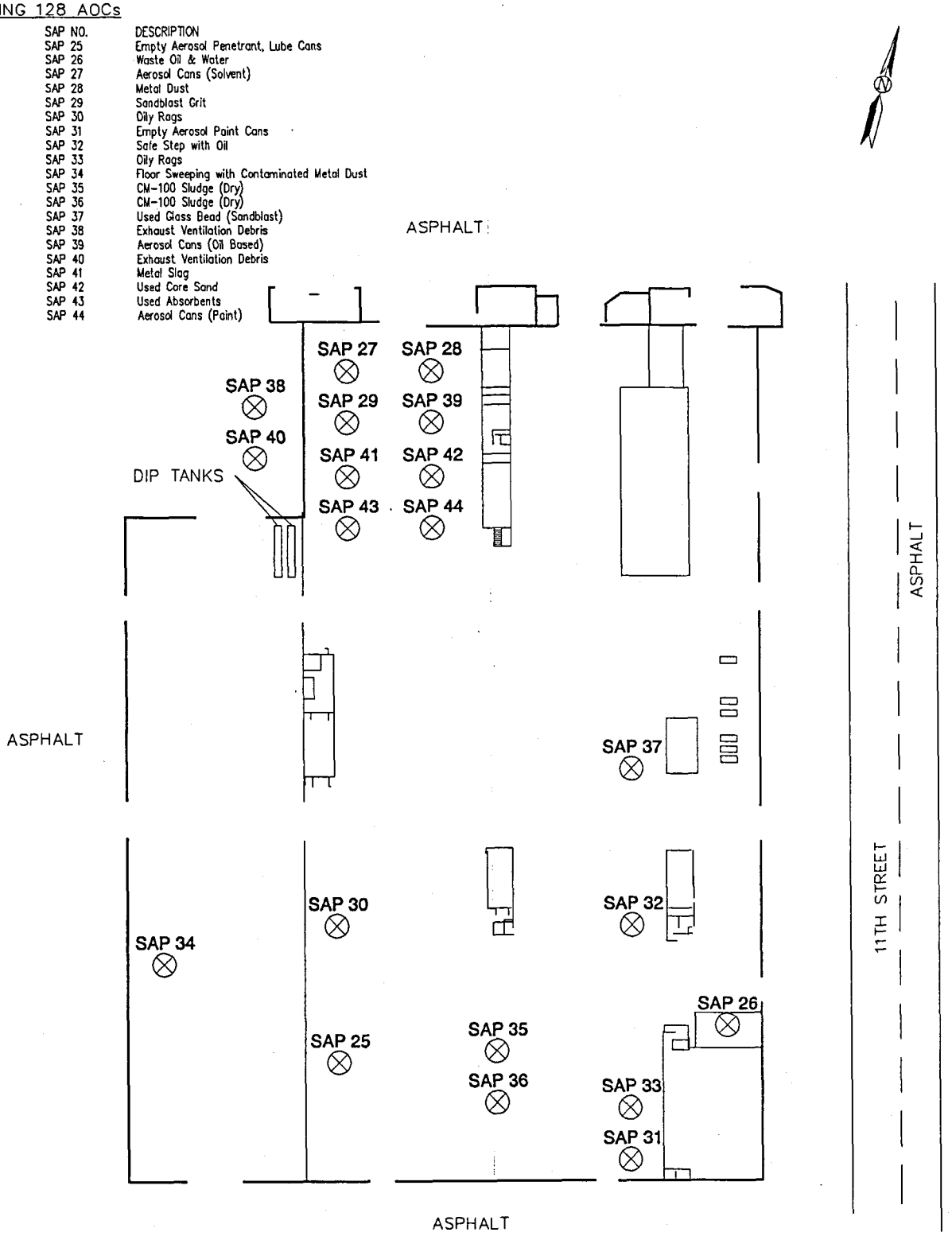
4.90.4 PA Recommendations

No further action is recommended for AOCs SAP 25 through SAP 44, based upon the following findings:

- The SAPs were operated for only 2 to 4 years;
- They were located on pavement inside a covered building;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No significant floor staining was observed.

BUILDING 128 AOCs

TAB NO.	SAP NO.	DESCRIPTION
90	SAP 25	Empty Aerosol Penetrant, Lube Cans
91	SAP 26	Waste Oil & Water
92	SAP 27	Aerosol Cans (Solvent)
93	SAP 28	Metal Dust
94	SAP 29	Sandblast Grit
95	SAP 30	Oily Rags
96	SAP 31	Empty Aerosol Paint Cans
97	SAP 32	Safe Step with Oil
98	SAP 33	Oily Rags
99	SAP 34	Floor Sweeping with Contaminated Metal Dust
100	SAP 35	CM-100 Sludge (Dry)
101	SAP 36	CM-100 Sludge (Dry)
102	SAP 37	Used Glass Bead (Sandblast)
103	SAP 38	Exhaust Ventilation Debris
104	SAP 39	Aerosol Cans (Oil Based)
105	SAP 40	Exhaust Ventilation Debris
106	SAP 41	Metal Slag
107	SAP 42	Used Core Sand
108	SAP 43	Used Absorbents
109	SAP 44	Aerosol Cans (Paint)



LEGEND

AOC = AREA OF CONCERN
SAP = SATELLITE ACCUMULATION POINT

0 25 50 75 100
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SAPs 25 THROUGH 44 SATELLITE ACCUMULATION POINTS BUILDING 128	FIGURE 4.90-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.90-1	GROUP B AREAS OF CONCERN	
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.90-2 Satellite Accumulation Point (AOC SAP 25), Building 128 Facing East 3/11/98

Figure 4.90-3 Satellite Accumulation Point (AOC SAP 26), Building 128 Facing South 3/11/98

Figure 4.90-4 Approximate Location of AOC SAPs 27, 28, 29, 39, 43, 44 Building 128, Facing Northwest 2/15/98

Figure 4.90-5 Satellite Accumulation Point (AOC SAP 30), Building 128 Facing South 3/11/98

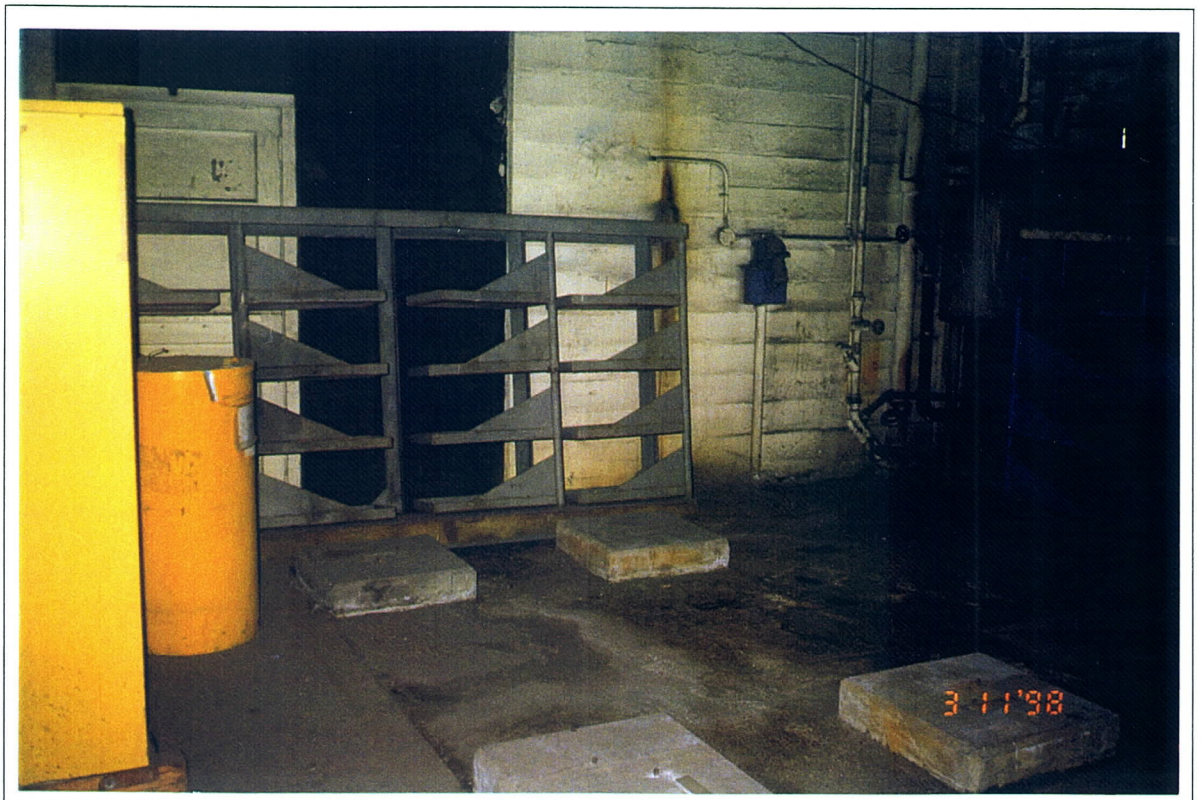


Figure 4.90-6 Satellite Accumulation Point (AOC SAP 31), Building 128
Facing Southeast 3/11/98

Figure 4.90-7 Satellite Accumulation Point (AOC SAP 32), Building 128
Facing Southeast 3/11/98

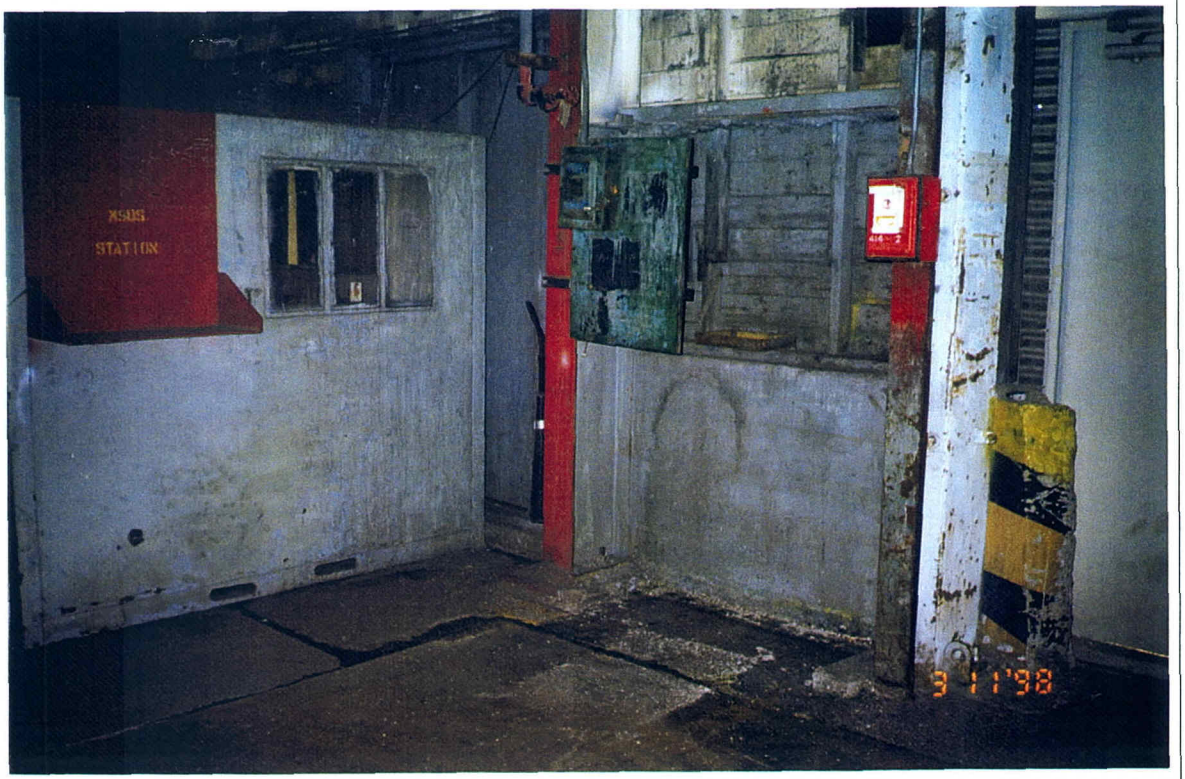


Figure 4.90-8 Satellite Accumulation Point (AOC SAP 33), Building 128 Facing Southeast 3/11/98

Figure 4.90-9 Satellite Accumulation Point (AOC SAP 34), Building 128 Facing West 3/11/98

Figure 4.90-10 Satellite Accumulation Points (AOCs SAP 35, 36), Building 128 Facing East 3/11/98

Figure 4.90-11 Satellite Accumulation Point (AOC SAP 37), Building 128 Facing South 3/11/98

Figure 4.90-12 Satellite Accumulation Points (AOC SAP 38, 40), Building 128 Facing Southeast 9/3/98

Figure 4.90-13 Satellite Accumulation Point (AOC SAP 39), Building 128 Facing South 3/11/98

Figure 4.90-14 Satellite Accumulation Point (AOC SAP 41), Building 128 Facing West 3/11/98

Figure 4.90-15 Satellite Accumulation Point (AOC SAP 42), Building 128 Facing South 3/11/98

4.110 to 4.125 SATELLITE ACCUMULATION POINTS, BUILDING 129 (AOCs SAP 45 through SAP 60)

A description of the Satellite Accumulation Points located in Building 129 (AOCs SAP 45 through SAP 60), the building's operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.110.1 to 4.110.4. All sixteen SAPs located in Building 129 (numbered 110 to 125 on Tables 1-1 and 4.110-1) are addressed in this section.

4.110.1 Site Description

Sixteen Group B AOC SAPs (SAP 45 through SAP 60) were located inside Building 129 and used in association with the activities conducted within the building. During the March 1998 site reconnaissance, Building 129 was no longer in use and the SAP drums were no longer in place, although signs for some SAPs were still posted. Table 4.110-1 summarizes the location and characteristics of AOCs SAP 45 through 60. A site map is provided as Figure 4.110-1. Site photographs are shown in Figures 4.110-2 to 4.110-12.

From 1940 to 1973, Building 129 was used as the Electrical Shop (Shop 51) and the Weapons Shop (Shop 36). These operations generated waste oils, greases, degreasers, and solvents that were used for paint removal. During this time, spills from process tanks, overflow from waste trenches, and trench-cleaning activities inside Building 129 may have impacted the wood block floors. A plating shop located in the northwestern corner of Building 129 was not located over wood block floors.

After 1973, Building 129 was used as Machinist Shop (Shop 38) consisting of three major operations: a diesel shop, a transmission shop, and a winch shop (NEESA 1990). These operations involved machining services, propulsion component overhaul, and repair and testing of pumps, valves, turbines, propellers, shafts, and other components. Lubricating oils, cleaning solvents, and oily absorbent pads were the major wastes generated from these operations.

Four additional AOCs associated with Building 129 (AOCs MISC 2, MISC 6, PT 2, and PT 7) were investigated independent of the SAPs and are addressed in Sections 4.54, 4.58, 4.66, and 4.71, respectively, of this report. AOC MISC 2 includes the wood block flooring of Building 129, and MISC 6 includes the diesel test cells, including USTs 129.3 to 129.9. AOC PT 2 is the former plating shop located in the northwestern portion of Building 129, while PT 7 includes the former cleaning dip tanks located in the southeastern portion of Building 129.

Table 4.110-1
AOCs SAP 45 through SAP 60 Site Descriptions

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
110	SAP 45	128-38-10	Building 129, Air Compressor Section	D-31, E-31, D-32, E-32	Small volume SAP for oily absorbent pads.	Metal drum.	55-gallons.
111	SAP 46	129-2	Building 129, Hydraulic Shop.	D-31, E-31, D-32, E-32	Small volume SAP for hydraulic oil.	Metal drum.	55-gallons.
112	SAP 47	129-3	Building 129, Column G-8 to G-9.	D-31, E-31, D-32, E-32	Small volume SAP for oily rags.	Metal drum.	55-gallons.
113	SAP 48	129-38-11	Building 129, Column C-15.	D-31, E-31, D-32, E-32	Small volume SAP for oily rags.	Metal drum.	55-gallons.
114	SAP 49	129-4	Building 129, Column G-14.	D-31, E-31, D-32, E-32	Small volume SAP for lubricating oil.	Metal drum.	55-gallons.
115	SAP 50	129-4	Building 129, Column G-8 to G-9.	D-31, E-31, D-32, E-32	Small volume SAP for oily absorbent pads.	Metal drum.	55-gallons.
116	SAP 51	129-5	Building 129, Column H-7.	D-31, E-31, D-32, E-32	Small volume SAP for waste sandblast grit.	Metal drum.	55-gallons.
117	SAP 52	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste hydraulic oil.	Metal drum.	55-gallons.
118	SAP 53	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste hydraulic oil.	Metal drum.	55-gallons.
119	SAP 54	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste lube oil.	Metal drum.	55-gallons.
120	SAP 55	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste lube oil.	Metal drum.	55-gallons.
121	SAP 56	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste Fyrquel preservative.	Metal drum.	55-gallons.
122	SAP 57	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste lube oil.	Metal drum.	55-gallons.
123	SAP 58	NA	Building 129, Test Cells.	D-31, E-31, D-32, E-32	Small volume SAP for waste Fyrquel lubricant.	Metal drum.	55-gallons.
124	SAP 59	NA	Building 129, Air Conditioning and Refrigeration Section.	D-31, E-31, D-32, E-32	Small volume SAP for vacuum pump oil.	Metal drum.	55-gallons.
125	SAP 60	NA	Building 129, Air Conditioning and Refrigeration Section.	D-31, E-31, D-32, E-32	Small volume SAP for waste refrigeration oil.	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
NA = Not Available
No. = Number
SAP = Satellite Accumulation Point

4.110.2 Operational History and Waste Characteristics

Table 4.110-2 summarizes the operational histories and waste characteristics for AOCs SAP 45 through SAP 60.

Table 4.110-2
AOCs SAP 45 through SAP 60 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 45	1994 to 1996	Storage of small amounts of wastes.	Oily absorbent pads.	Five 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 46	1995 to 1996	Storage of small amounts of wastes.	Hydraulic oil.	280 gallons, 55-gallon drum maximum at any one time.
SAP 47	1995 to 1996	Storage of small amounts of wastes.	Oily rags.	Three 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 48	1994 to 1996	Storage of small amounts of wastes.	Oily rags.	Five 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 49	1995 to 1996	Storage of small amounts of wastes.	Lubricating oil.	110 gallons, 55-gallon drum maximum at any one time.
SAP 50	1995 to 1996	Storage of small amounts of wastes.	Oily absorbent pads.	Three 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 51	1995 to 1996	Storage of small amounts of wastes.	Spent sandblast grit.	100 pounds, 55-gallon drum maximum at any one time.
SAP 52	1992 to 1996	Storage of small amounts of wastes.	Waste hydraulic oil.	280 gallons, 55-gallon drum maximum at any one time.
SAP 53	1992 to 1996	Storage of small amounts of wastes.	Waste hydraulic oil.	280 gallons, 55-gallon drum maximum at any one time.
SAP 54	1992 to 1996	Storage of small amounts of wastes.	Waste lube oil.	100 gallons, 55-gallon drum maximum at any one time.
SAP 55	1992 to 1996	Storage of small amounts of wastes.	Waste lube oil.	320 gallons, 55-gallon drum maximum at any one time.
SAP 56	1992 to 1996	Storage of small amounts of wastes.	Waste Fyrquel preservative.	20 gallons, 55-gallon drum maximum at any one time.
SAP 57	1992 to 1996	Storage of small amounts of wastes.	Waste lube oil.	560 gallons, 55-gallon drum maximum at any one time.
SAP 58	1992 to 1996	Storage of small amounts of wastes.	Waste Fyrquel lubricant.	20 gallons, 55-gallon drum maximum at any one time.
SAP 59	1992 to 1996	Storage of small amounts of wastes.	Vacuum pump oil.	110 gallons, 55-gallon drum maximum at any one time.
SAP 60	1992 to 1996	Storage of small amounts of wastes.	Waste refrigeration oil.	110 gallons, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = SAP

The EBS spill log indicates one reported spill at Building 129; an unknown amount of gasoline spilled in 1993. This spill was not associated with the SAPs and was likely contained and cleaned according to Navy procedures.

4.110.3 Preliminary Assessment Resources

Table 4.110-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.110-3
AOCs SAP 45 through SAP 60 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 129.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at the Building 129.
Spill Log	1988 to 1996	LBNSY-ED	Indicates one spill at Building 129.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 129 operations and wastes generated.
Weekly SAP Inspection Forms	1992 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1992	LBNSY-ED	Initiation date of Building 129 SAPs.
Long Beach Naval Complex Hazardous Waste Management Plan	1993	Engineering-Science	Building 129 hazardous materials usage and waste storage.
Environmental Baseline Survey	1996	LBNSY-ED	General Building 129 history.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 129 operations.
Diesel Test Cells Figure	Unknown	LBNSY	Shows location and contents of each diesel test cell.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point
UST = Underground Storage Tank

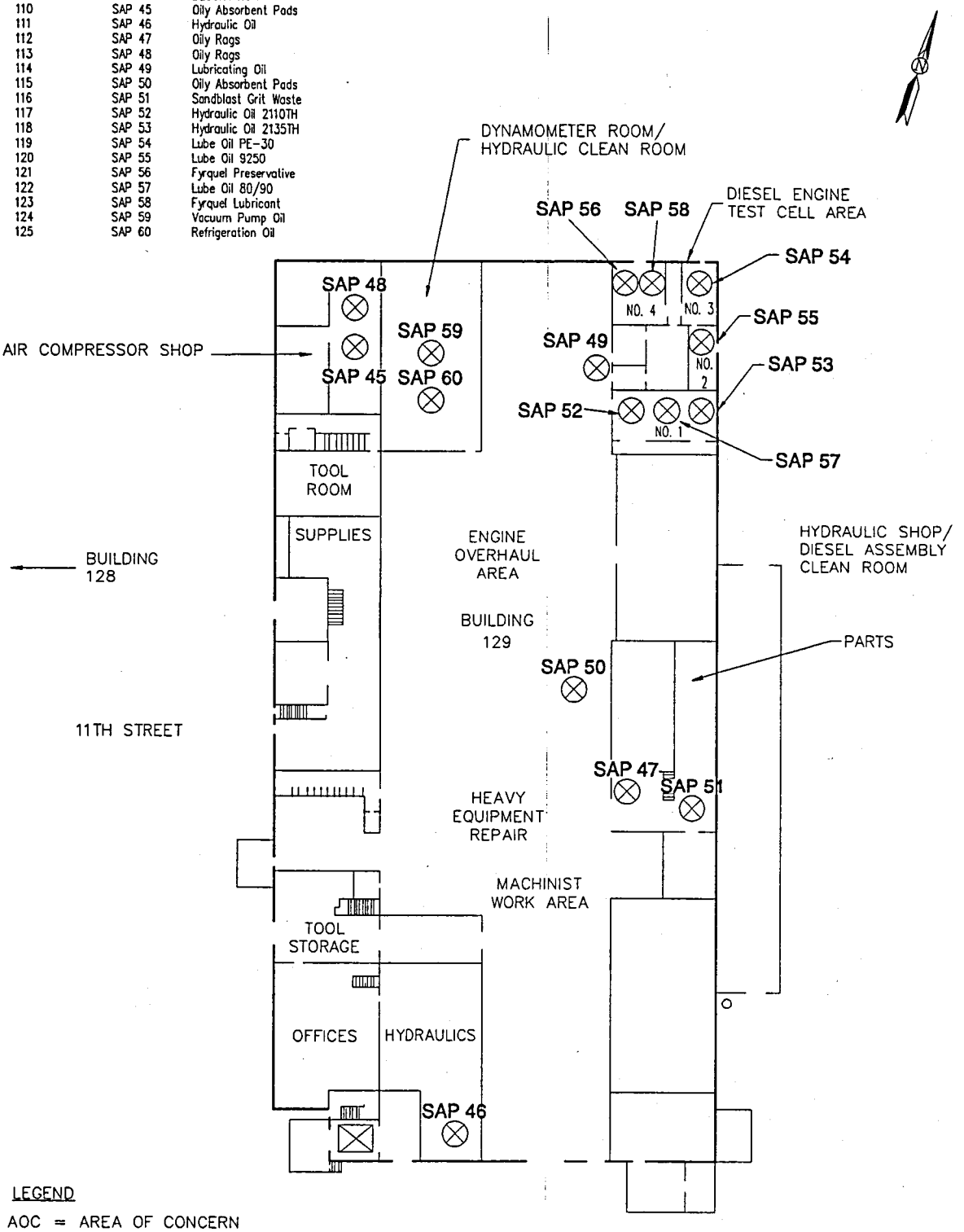
4.110.4 PA Recommendations

No further action is recommended for AOCs SAP 45 through 60, based on the following findings:

- The SAPs were operated for only 1 to 4 years;
- They were inside a covered building;
- Wastes were stored in containers on spill containment pallets;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No floor staining was observed.

BUILDING 129 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
110	SAP 45	Oily Absorbent Pads
111	SAP 46	Hydraulic Oil
112	SAP 47	Oily Rags
113	SAP 48	Oily Rags
114	SAP 49	Lubricating Oil
115	SAP 50	Oily Absorbent Pads
116	SAP 51	Sandblast Grit Waste
117	SAP 52	Hydraulic Oil 2110TH
118	SAP 53	Hydraulic Oil 2135TH
119	SAP 54	Lube Oil PE-30
120	SAP 55	Lube Oil 9250
121	SAP 56	Fyrquel Preservative
122	SAP 57	Lube Oil 80/90
123	SAP 58	Fyrquel Lubricant
124	SAP 59	Vacuum Pump Oil
125	SAP 60	Refrigeration Oil



LEGEND

AOC = AREA OF CONCERN

SAP = SATELLITE ACCUMULATION POINT

NO. = NUMBER

SAP 46 ⊗ = SAP LOCATION

0 55

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SAPs 45 THROUGH 60 SATELLITE ACCUMULATION POINTS BUILDING 129 GROUP B AREAS OF CONCERN	FIGURE 4.110-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.110-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.110-2 Satellite Accumulation Points (AOC SAP 45, 48), Building 129 3/11/98
Approximate Location, Facing North

Figure 4.110-3 Satellite Accumulation Point (AOC SAP 46), Building 129 3/11/98
Approximate Location, Facing Southwest

Figure 4.110-4 Satellite Accumulation Point (AOC SAP 47), Building 129 Approximate Location, Facing East 3/11/98

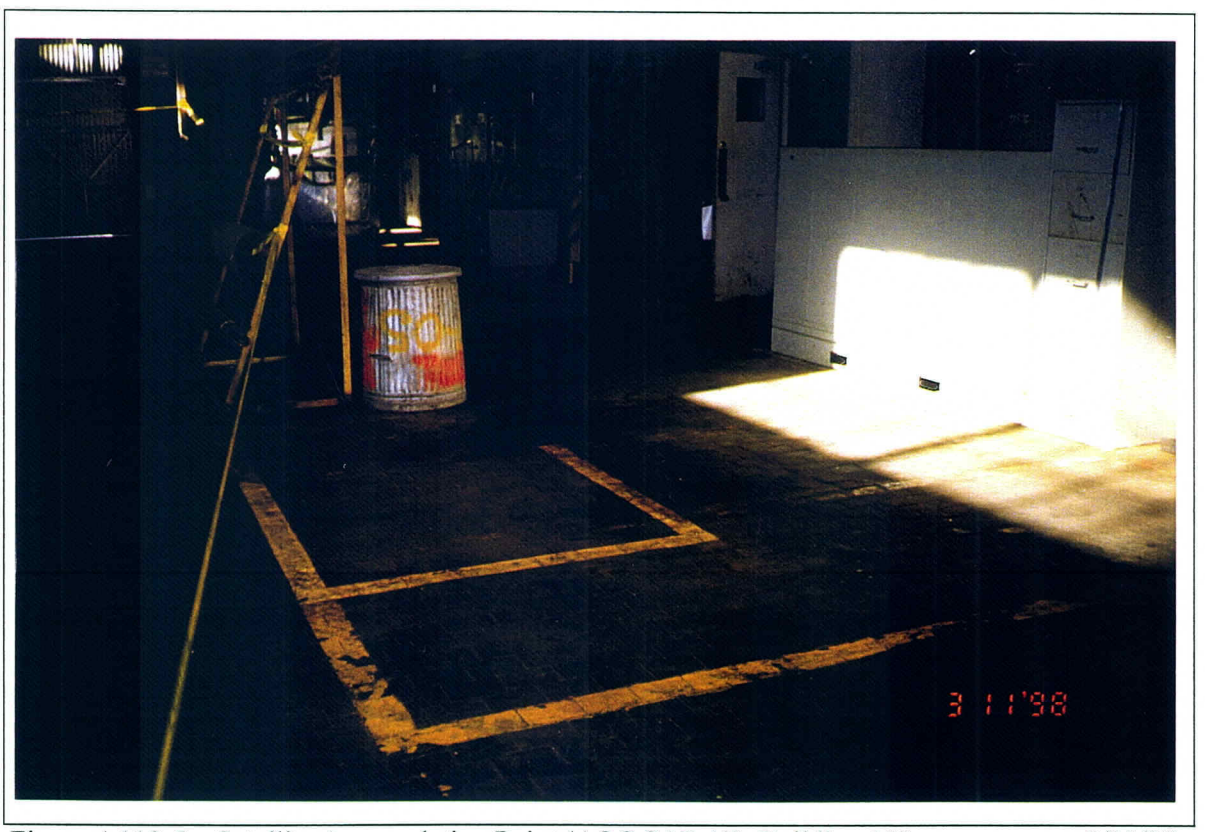


Figure 4.110-5 Satellite Accumulation Point (AOC SAP 49), Building 129 Approximate Location, Facing North 3/11/98

Figure 4.110-6 Satellite Accumulation Point (AOC SAP 50), Building 129 Approximate Location, Facing East 3/11/98

Figure 4.110-7 Satellite Accumulation Point (AOC SAP 51), Building 129 Facing North 3/11/98

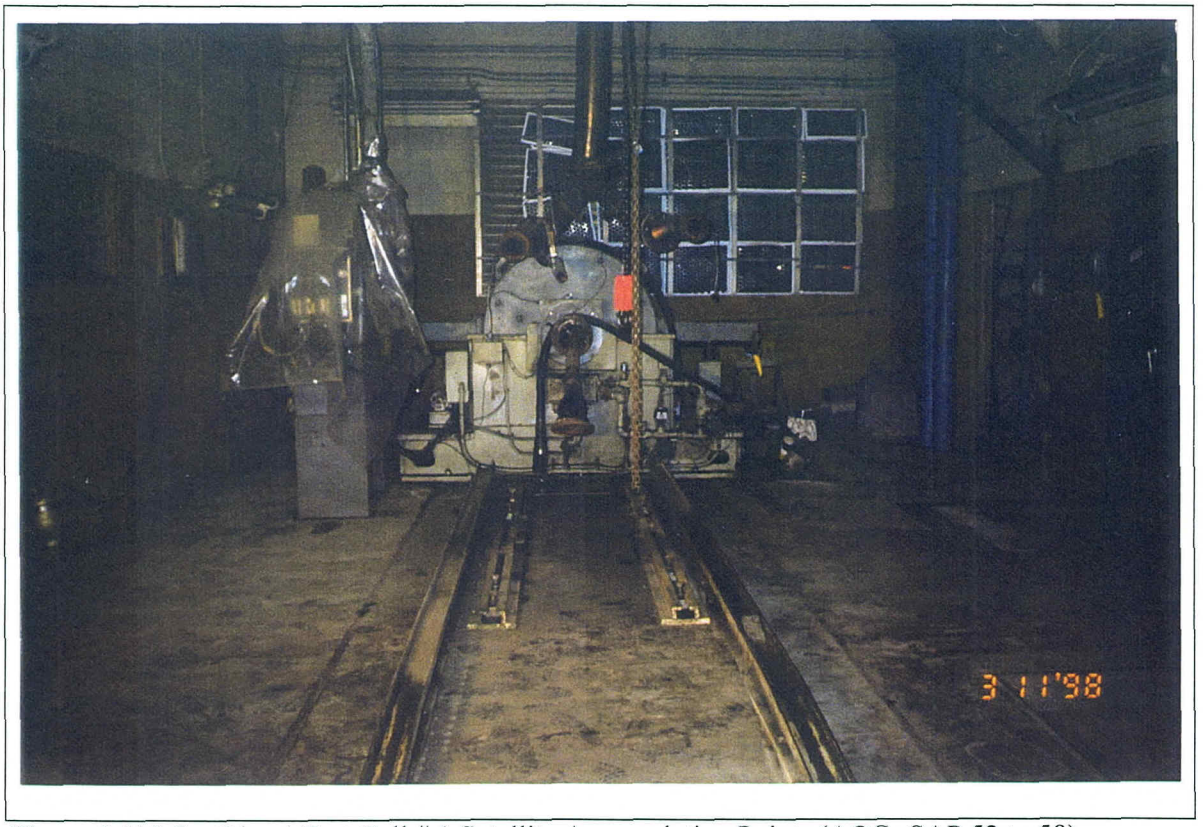


Figure 4.110-8 Diesel Test Cell # 1 Satellite Accumulation Points (AOCs SAP 52 to 58), Building 129, Approximate Locations, Facing East 3/11/98

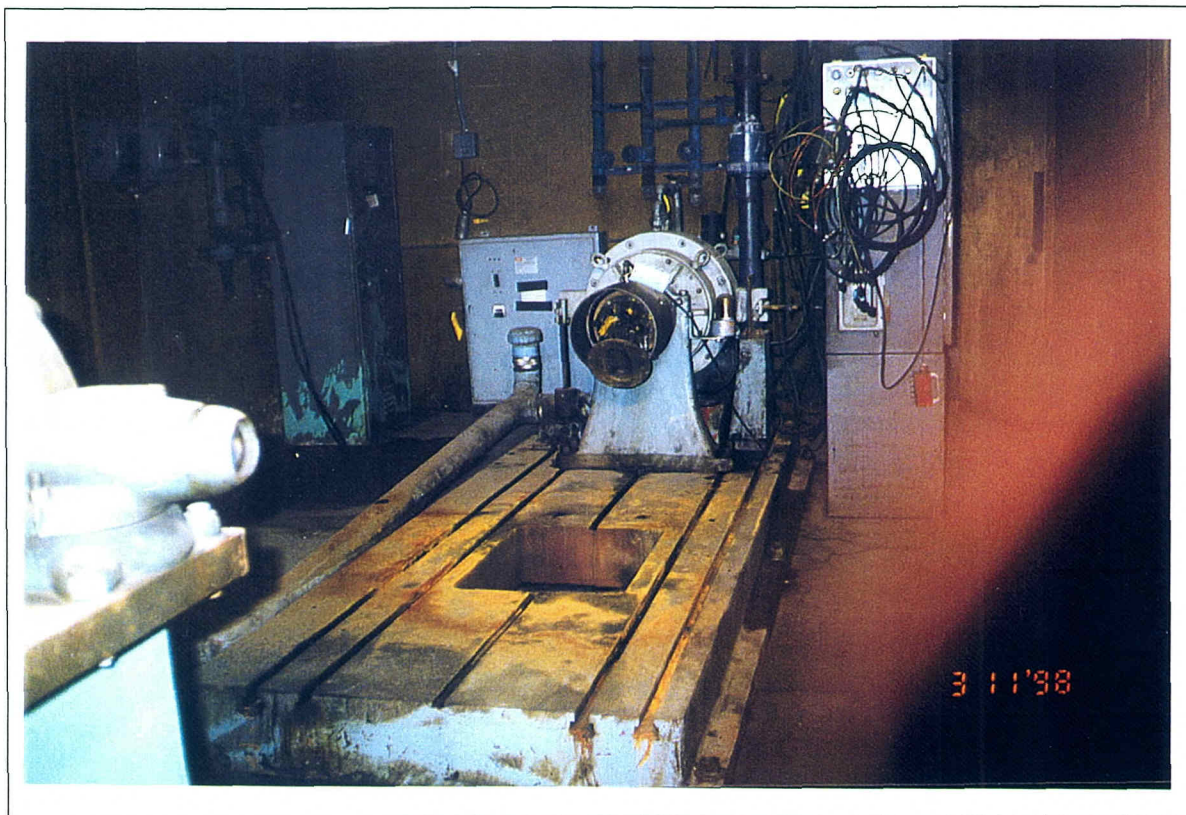


Figure 4.110-9 Diesel Test Cell # 2 Satellite Accumulation Points (AOCs SAP 52 to 58), Building 129, Approximate Locations, Facing South 3/11/98

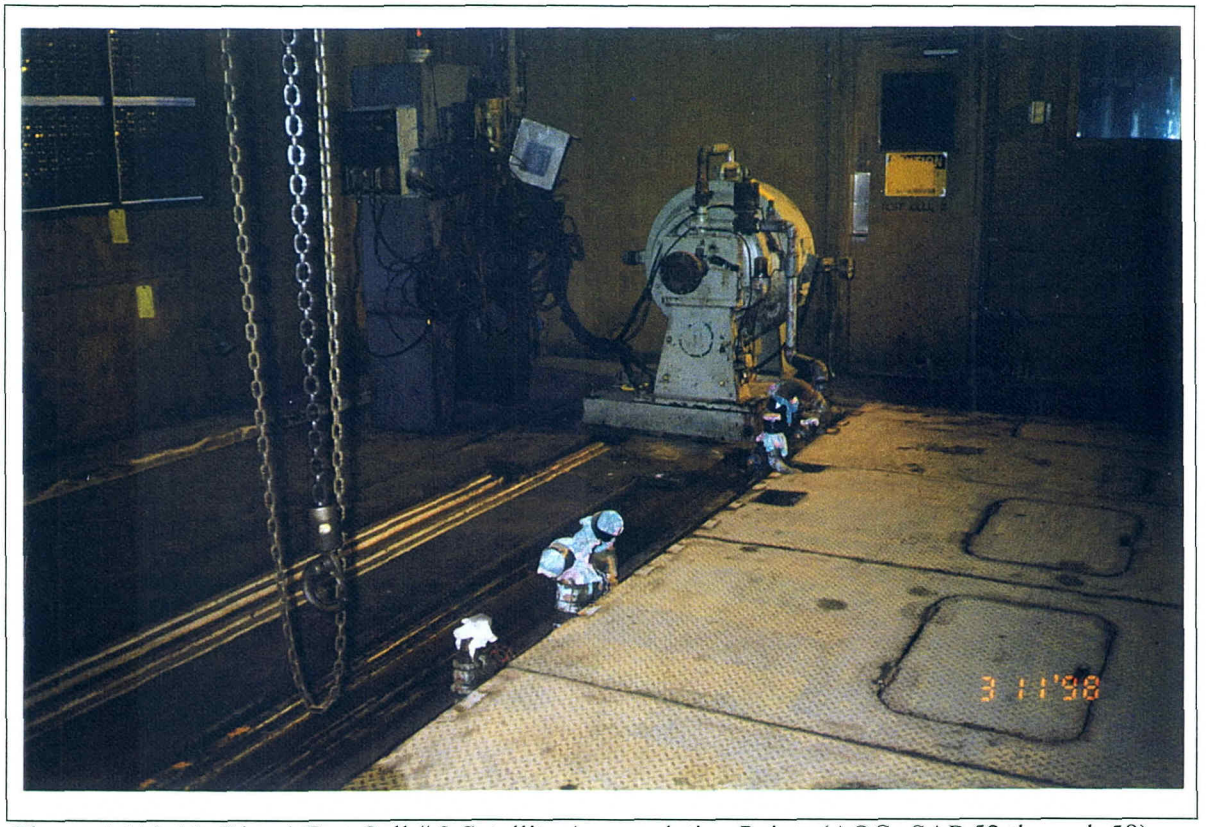


Figure 4.110-10 Diesel Test Cell # 3 Satellite Accumulation Points (AOCs SAP 52 through 58), Building 129, Approximate Locations, Facing South 3/11/98

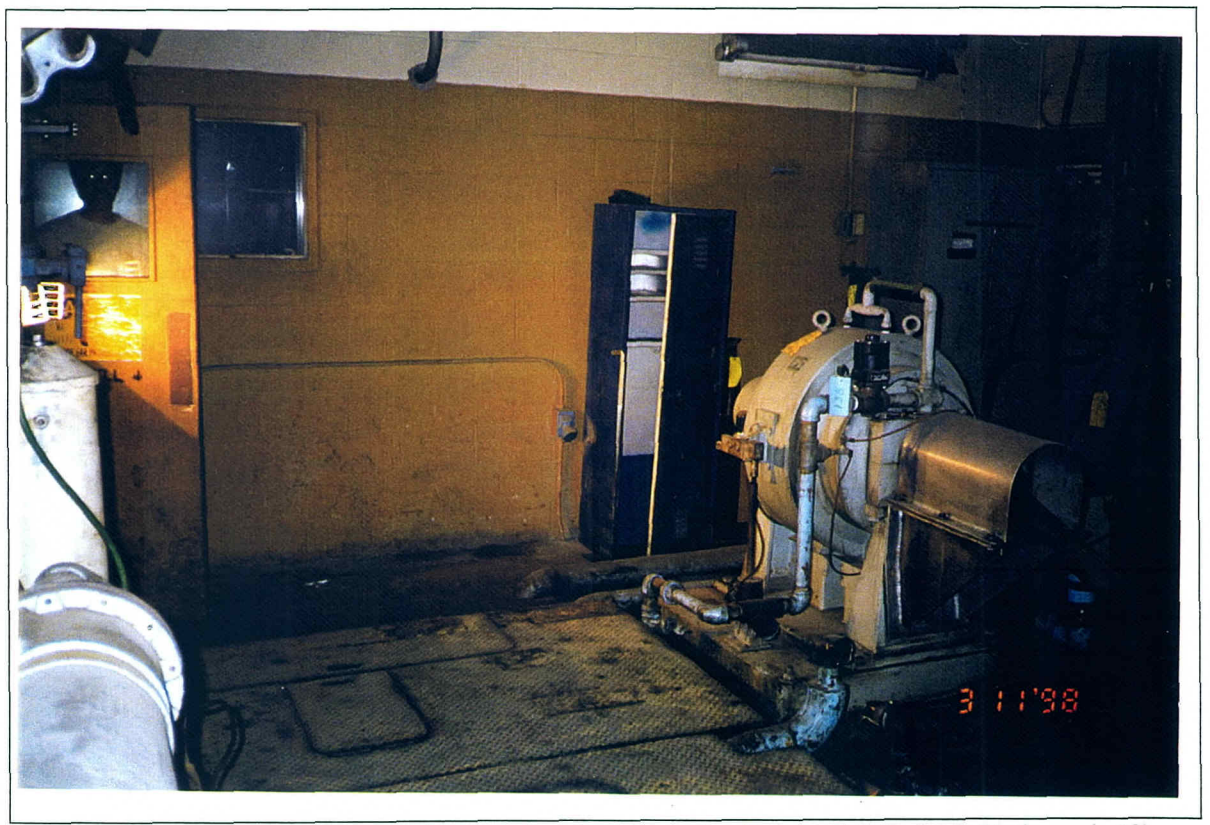


Figure 4.110-11 Diesel Test Cell # 4 Satellite Accumulation Points (AOCs SAP 52 through 58), Building 129, Approximate Locations, Facing South 3/11/98

Figure 4.110-12 Satellite Accumulation Points (AOCs SAP 59 and 60), Building 129
Approximate Location, Unassociated Equipment, Facing North 3/11/98

4.126 to 4.133 SATELLITE ACCUMULATION POINTS, BUILDING 130 (AOCs SAP 61 through SAP 68)

A description of the SAPs located at Building 130 (AOCs SAP 61 through SAP 68), the SAP history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.126.1 to 4.126.4. All eight SAPs located in Building 130 (numbered 126 to 133 in Tables 1-1 and 4.126-1) are discussed in this section.

4.126.1 Site Description

Eight AOC SAPs were located inside Building 130 (SAP 61 through SAP 68) and were used in association with the activities conducted within the building. During the January and March 1998 site reconnaissances, Building 130 was no longer in use and some of the SAP drums were no longer in place, although many SAP signs were still posted. Table 4.126-1 summarizes the location and characteristics of AOCs SAP 61 through SAP 68. A site map is provided as Figure 4.126-1. Site photographs are shown in Figures 4.126-2 to 4.126-9.

From 1945, Building 130 was used for fabrication and repair of ship heating, air-conditioning, and ventilation ductwork as well as general sheet metal operations. Building 130 housed the material and equipment for punching, forming, sawing, painting, welding, plating, and assembly of metals to 1/8" thick (Brown and Caldwell 1980). Operations generated scrap metals, caustics, waste paints, used absorbents, waste rags, and empty aerosol cans.

Four additional AOCs associated with Building 130 (AOCs MISC 3, PCB 16, PCB 20, and PT 6) were investigated independent of the SAPs and are addressed in Sections 4.55, 4.61, 4.64, and 4.70 of this report, respectively. AOC MISC 3 addresses the concrete block flooring of Building 130. AOC PCB 16 addresses ventilation service operations, which generated PCB wastes that were stored as AOC PCB 20. AOC PT 6 addresses five sheet metal cleaning/plating tanks located in the southeastern portion of Building 130.

Table 4.126-1
AOCs SAP 61 through SAP 68 Site Description

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
126	SAP 61	130-17-10	Building 130, Painting Booth.	H-29, I-29, J-29, K-29	Small volume SAP for waste paint.	Metal drum.	55-gallons.
127	SAP 62	130-17-3	Building 130, Column B-7.	H-29, I-29, J-29, K-29	Small volume SAP for waste absorbent pads and oily rags.	Metal drum.	55-gallons.
128	SAP 63	130-17-4	Building 130, Column C-6.	H-29, I-29, J-29, K-29	Small volume SAP for empty aerosol lube cans (Formula 202).	Metal drum.	55-gallons.
129	SAP 64	130-17-5	Building 130, Column A-3.	H-29, I-29, J-29, K-29	Small volume SAP for hait rags.	Metal drum.	55-gallons.
130	SAP 65	130-17-6	Building 130, Column B-3.	H-29, I-29, J-29, K-29	Small volume SAP for empty aerosol paint cans (layout blue).	Metal drum.	55-gallons.
131	SAP 66	130-17-7	Building 130, Column C-3.	H-29, I-29, J-29, K-29	Small volume SAP for plasma arc waste (heavy metals).	Metal drum.	55-gallons.
132	SAP 67	130-17-8	Building 130, Column D-3.	H-29, I-29, J-29, K-29	Small volume SAP for waste blastoff rags.	Metal drum.	55-gallons.
133	SAP 68	130-17-9	Building 130.	H-29, I-29, J-29, K-29	Small volume SAP for waste butyl acetate.	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

4.126.2 Operational History and Waste Characteristics

Table 4.126-2 summarizes the operational history and waste characteristics.

Table 4.126-2
AOCs SAP 61 through SAP 68 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 61	1994 to 1996	Storage of small amounts of wastes.	Waste Paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 62	1993 to 1996	Storage of small amounts of wastes.	Waste absorbent pads and oily rags.	Annual quantities: 450 pounds of absorbent pads; 120 pounds of oily rags. 55-gallon drum maximum at any one time.
SAP 63	1993 to 1996	Storage of small amounts of wastes.	Empty aerosol lube cans (Formula 202)	250 pounds, 55-gallon drum maximum at any one time.
SAP 64	1993 to 1996	Storage of small amounts of wastes.	Waste hait rags used for cleaning machinery.	200 pounds, 55-gallon drum maximum at any one time.
SAP 65	1993 to 1996	Storage of small amounts of wastes.	Empty aerosol paint cans (layout blue).	150 pounds, 55-gallon drum maximum at any one time.
SAP 66	1993 to 1996	Storage of small amounts of wastes.	Plasma arc waste (heavy metals).	700 pounds, 55-gallon drum maximum at any one time.
SAP 67	1993 to 1996	Storage of small amounts of wastes.	Blastoff rags used for cleaning machines.	200 pounds, 55-gallon drum maximum at any one time.
SAP 68	1993 to 1996	Storage of small amounts of wastes.	Butyl acetate used as a degreaser.	Annual quantity unknown, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

The EBS spill log indicates one reported spill at Building 130; 1000 gallons of distillate fuel spilled at the southeastern portion in 1990. This spill was not associated with the SAPs. These spills were likely contained and cleaned up according to Navy procedures.

4.126.3 Preliminary Assessment Resources

Table 4.126-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.126-3
AOCs SAP 61 through SAP 68 Preliminary Assessment Resources Summary

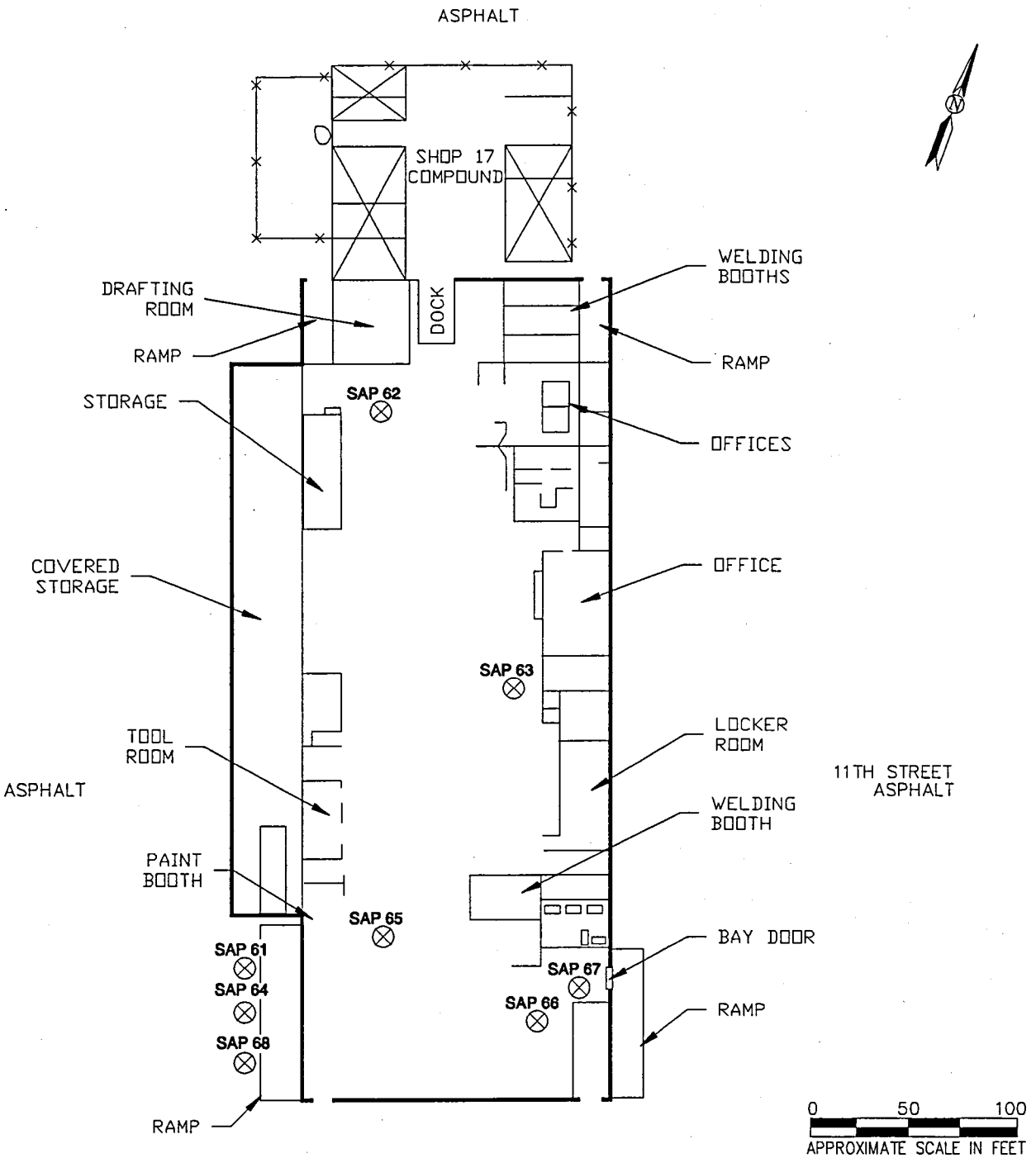
Resource	Date	Source	Summary
Toxic and Hazardous Waste Procedures Survey	1980	Brown and Caldwell	Wastes generated at Building 130.
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 130.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at the Building 130.
Spill Log	1988 to 1996	LBNSY-ED	Indicates one spill at Building 130.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 130 operations and wastes generated.
Weekly SAP Inspection Forms	1993 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1993	LBNSY-ED	Initiation date of Building 130 SAPs.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 130 operations.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point

4.126.4 PA Recommendations

No further action is recommended for AOCs SAP 61 through SAP 68, based on the following findings:

- The SAPs were operated for only 2 to 3 years;
- They were inside a covered building;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No floor staining was observed.



LEGEND

SAP 62 ⊗	=	LOCATION OF SAP
PCB	=	POLYCHLORINATED BIPHENYL
AOC	=	AREA OF CONCERN
MISC	=	MISCELLANEOUS
SAP	=	SATELLITE ACCUMULATION POINT
—×—×—	=	CHAIN LINK FENCE

BUILDING 130 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
126	SAP 61	PAINT WASTE
127	SAP 62	ABSORBANT PADS AND OILY RAGS
128	SAP 63	FORMULA 202 (EMPTY AEROSOLS) LUBE
129	SAP 64	RAGS
130	SAP 65	LAYOUT BLUE (EMPTY AEROSOLS-PAINT)
131	SAP 66	PLASMA ARC WASTE (HEAVY METALS)
132	SAP 67	BLAST OFF RAGS (CAUSTIC)
133	SAP 68	BUTYACETATE

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.126-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC SAPs 61 THROUGH 68
SATELLLITE ACCUMULATION POINTS
BUILDING 130
GROUP B AREAS OF CONCERN

FIGURE
4.126-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.126-2 Satellite Accumulation Point (AOC SAP 61), Building 130 Approximate Location, Facing South 3/12/98

Figure 4.126-3 Satellite Accumulation Point (AOC SAP 64), Building 130 Facing East 3/12/98

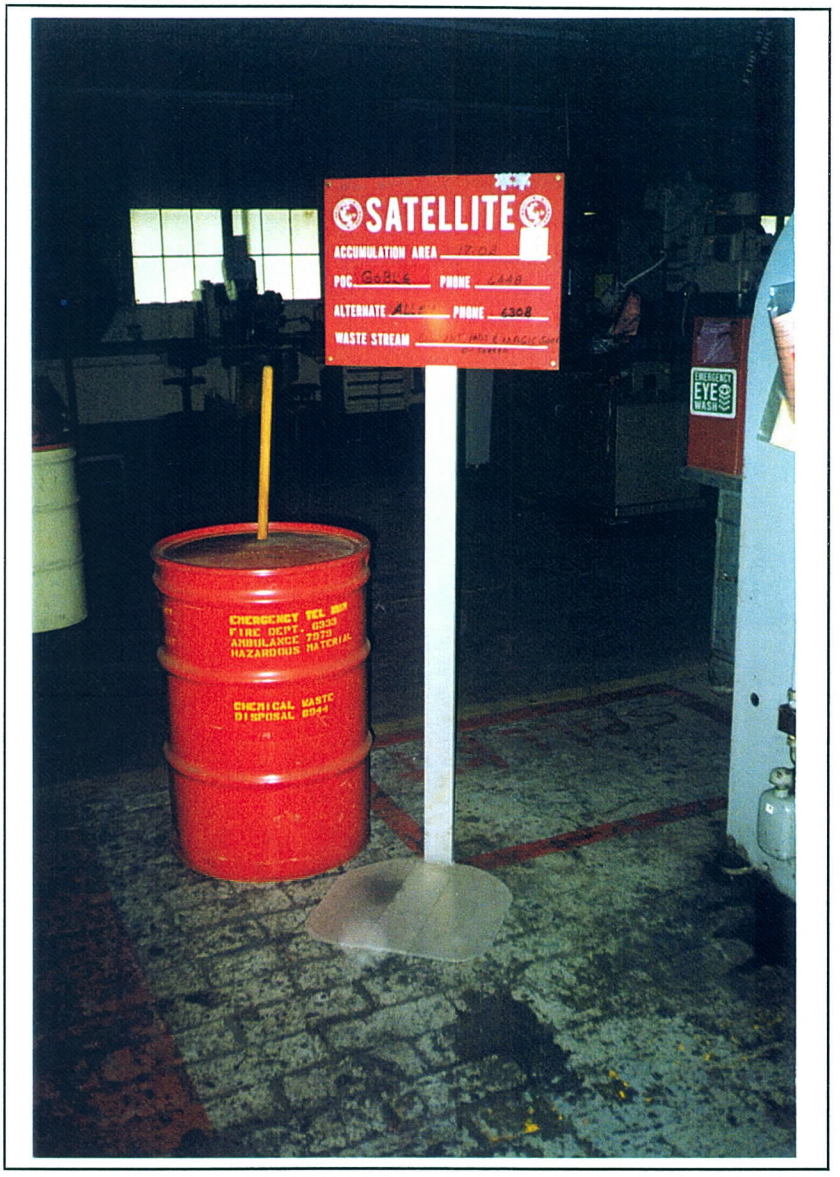


Figure 4.126-4 Satellite Accumulation Point (AOC SAP 62), Building 130, Empty Drum, Facing Northwest 1/14/98

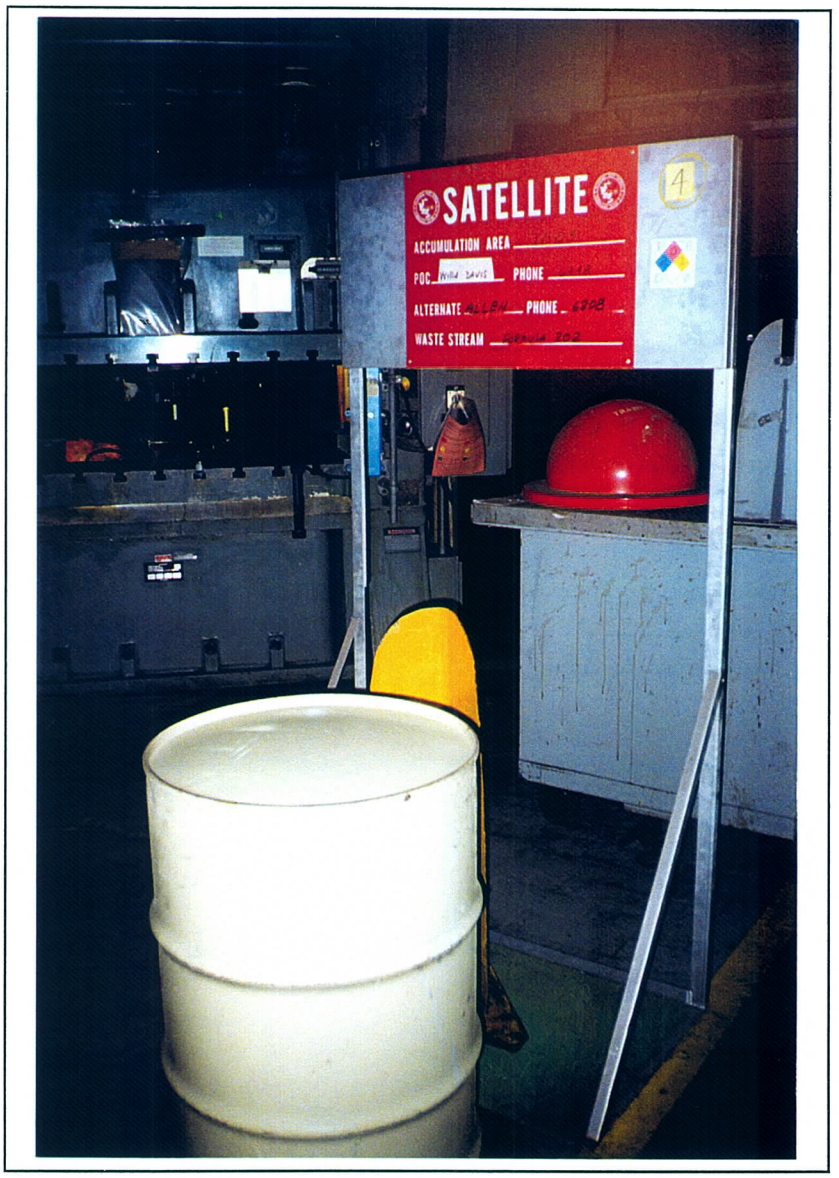


Figure 4.126-5 Satellite Accumulation Point (AOC SAP 63), Building 130, Empty Drum, Facing East 1/14/98

Figure 4.126-6 Satellite Accumulation Point (AOC SAP 65), Building 130
Facing West 1/14/98

Figure 4.126-7 Satellite Accumulation Point (AOC SAP 66), Building 130
Approximate Location, Facing East 1/14/98

Figure 4.126-8 Satellite Accumulation Point (AOC SAP 67), Building 130
Empty Drum, Facing South 3/12/98

Figure 4.126-9 Satellite Accumulation Point (AOC SAP 68), Building 130, Approximate Location,
Unassociated Empty Drums, Facing Southeast 3/12/98

4.134 to 4.165 SATELLITE ACCUMULATION POINTS, BUILDING 132 (AOCs SAPs 74, 76, and 78 through 107)

A description of the Satellite Accumulation Points located at Building 132 (AOCs SAPs 74, 76, and 78 through 107), the building's operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.134.1 to 4.134.4. All 32 SAPs located in Building 132 (numbered 134 to 165 in Tables 1-1 and 4.134-1) are addressed in this section. Note that SAPs 75 and 77 were Group A POIs addressed in 1996 and approved for no further action in 1997 (LBNSY-ED 1997a).

4.134.1 Site Description

A total of 32 SAPs were located inside Building 132 (AOCs SAP 74, SAP 76, and SAP 78 through SAP 107) and were used in association with the activities conducted within the building. During the site reconnaissance, Building 132 was no longer in use and the SAP drums were no longer in place. Table 4.134-1 summarizes the location and characteristics of AOCs SAPs 74, 76, and 78 through 107. A site map is provided as Figure 4.134-1. Site photographs are shown in Figures 4.134-2 to 4.134-22.

Building 132 was built in the early 1940s after the onset of World War II. It housed the largest machine shop at LBNSY (DTSC 1989). Building 132 originally housed the Machine Shop and Propeller Shop, but in the 1970s an eastern wing was constructed and used as the Pipe and Copper Shop. The primary activities conducted in Building 132 were repair and fabrication of pumps, valves, pipes, propellers, and other necessary equipment used on ships; equipment testing; and storage of hazardous materials and wastes. Building 132 housed machinery including milling machines, drilling machines, lathes, grinders, planers, and saws (NEESA 1990). Building 132 has concrete, metal grating, and wood block floors in different areas. The central portion of the building has wood block floors in work areas where activities required workers to stand.

Four additional AOCs within Building 132 (AOCs MISC 4, PT 4, PT 5, and PT 8) were investigated independent of the SAPs and are addressed in Sections 4.56, 4.68, 4.69, and 4.72, respectively, of this report. AOC MISC 4 is the wood block floors inside Building 132, AOC PT 4 is a plating shop located on the eastern side of Building 132, AOC PT 5 is a plating shop on the second floor of Building 132, and AOC PT 8 consists of the tin dip tanks in the northwestern portion of Building 132.

Table 4.134-1
AOCs SAPs 74, 76 and 78 through 107 Site Descriptions

Table 1-1 No.	AOC No.	AOC ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
134	SAP 74	132-31-1	Building 132, Column A-15.	G-, H-, I-, J-31 and -32	Small volume SAP for oily rags.	Metal drum.	55-gallons.
135	SAP 76	132-31-13	Building 132, Pump Section, Column 2.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oily absorbent.	Metal drum.	55-gallons.
136	SAP 78	132-31-2	Building 132, Pump Section, Column B-14.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oily absorbent.	Metal drum.	55-gallons.
137	SAP 79	132-31-3	Building 132, Machine Section, Column B-8.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oil.	Metal drum.	55-gallons.
138	SAP 80	132-31-4	Building 132, Pump Section, Column 1.	G-, H-, I-, J-31 and -32	Small volume SAP for used absorbent pads.	Metal drum.	55-gallons.
139	SAP 81	132-31-5	Building 132, Column C-7.	G-, H-, I-, J-31 and -32	Small volume SAP for oily absorbent socks.	Metal drum.	55-gallons.
140	SAP 82	132-31-6	Building 132, Column C-14.	G-, H-, I-, J-31 and -32	Small volume SAP for grinding swarf.	Metal drum.	55-gallons.
141	SAP 83	132-56-1	Building 132, Column M-25.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oil rags.	Metal drum.	55-gallons.
142	SAP 84	132-56-10	Building 132, Column L50/7.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oil.	Metal drum.	55-gallons.
143	SAP 85	132-56-2	Building 132, Column M-25.	G-, H-, I-, J-31 and -32	Small volume SAP for waste aerosol (gas).	Metal drum.	55-gallons.
144	SAP 86	132-56-3	Building 132.	G-, H-, I-, J-31 and -32	Small volume SAP for waste absorbents.	Metal drum.	55-gallons.
145	SAP 87	132-56-4	Building 132, Column L50/06.	G-, H-, I-, J-31 and -32	Small volume SAP for waste 1, 1, 1-trichloroethane (generated from clean-up activities).	Metal drum.	55-gallons.
146	SAP 88	132-56-5	Building 132, Column L-75/04.	G-, H-, I-, J-31 and -32	Small volume SAP for spent alcohol (from clean up activities).	Metal drum.	55-gallons.
147	SAP 89	132-56-7	Building 132, Column L 02.	G-, H-, I-, J-31 and -32	Small volume SAP for waste glass beads (from blasting activities).	Metal drum.	55-gallons.
148	SAP 90	132-56-8	Building 132, Column M 50/04.	G-, H-, I-, J-31 and -32	Small volume SAP for waste brazing flux.	Metal drum.	55-gallons.
149	SAP 91	132-56-9	Building 132, Columns N 4, M 75.	G-, H-, I-, J-31 and -32	Small volume SAP for consumable batteries.	Metal drum.	55-gallons.
150	SAP 92	132E-56-11	Building 132, Columns L-50-7/L 5.	G-, H-, I-, J-31 and -32	Small volume SAP for waste asbestos construction materials.	Metal drum.	55-gallons.
151	SAP 93	132-26-18	Building 132, Propeller Shop.	G-, H-, I-, J-31 and -32	Small volume SAP for electrode slag surfacing.	Metal drum.	55-gallons.
152	SAP 94	B-132-38-1	Building 132, Column M-11.	G-, H-, I-, J-31 and -32	Small volume SAP for alkaline batteries.	Metal drum.	55-gallons.
153	SAP 95	B-132-938-02	Building 132, Column C-01.	G-, H-, I-, J-31 and -32	Small volume SAP for waste oily rags.	Metal drum.	55-gallons.
154	SAP 96	B-132-938-03	Building 132, Column C-01.	G-, H-, I-, J-31 and -32	Small volume SAP for waste absorbent pads.	Metal drum.	55-gallons.
155	SAP 97	L-50-06	Building 132, Column L-50-06.	G-, H-, I-, J-31 and -32	Small volume SAP for waste 1,1,1-trichloroethane.	Metal drum.	55-gallons.
156	SAP 98	N-04	Building 132, Column N-04.	G-, H-, I-, J-31 and -32	Small volume SAP for waste wood rosin.	Metal drum.	55-gallons.

Table 4.134-1 (continued)
AOCs SAPs 74, 76 and 78 through 107 Site Descriptions

Table 1-1 No.	AOC No.	AOC ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
157	SAP 99	L-04	Building 132, Column L-04.	G-, H-, I-, J-31 and -32	Small volume SAP for contaminated rubber hoses.	Metal drum.	55-gallons.
158	SAP 100	M-1	Building 132, Column M-1.	G-, H-, I-, J-31 and -32	Small volume SAP for oily absorbent material (Safe Step).	Metal drum.	55-gallons.
159	SAP 101	L-50-7	Building 132, Column I-50-7.	G-, H-, I-, J-31 and -32	Small volume SAP for waste tungsten rods.	Metal drum.	55-gallons.
160	SAP 102	NA	Building 132, Column L-50-6.	G-, H-, I-, J-31 and -32	Small volume SAP for waste tungsten rods.	Metal drum.	55-gallons.
161	SAP 103	NA	Building 132.	G-, H-, I-, J-31 and -32	Small volume SAP for waste cobalt rods.	Metal drum.	55-gallons.
162	SAP 104	NA	Building 132.	G-, H-, I-, J-31 and -32	Small volume SAP for waste monel rods.	Metal drum.	55-gallons.
163	SAP 105	N-1	Building 132, Column N-1.	G-, H-, I-, J-31 and -32	Small volume SAP for solvent cement soaked rags.	Metal drum.	55-gallons.
164	SAP 106	M-04	Building 132, Column M-04.	G-, H-, I-, J-31 and -32	Small volume SAP for soaked oily rags.	Metal drum.	55-gallons.
165	SAP 107	L-05	Building 132, Column L-05.	G-, H-, I-, J-31 and -32	Small volume SAP for waste isopropyl alcohol.	Metal drum.	55-gallons.

Note: SAPs 75 and 77 were addressed as Group A Points of Interest (LBNSY-ED 1997a).

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

4.134.2 Operational History and Waste Characteristics

Table 4.134-2 summarizes the operational history and waste characteristics.

Table 4.134-2
AOCs SAPs 74, 76 and 78 through 107 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 74	1993 to 1997	Storage of small amounts of wastes.	Oily rags.	Four 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 76	1994 to 1997	Storage of small amounts of wastes.	Oily absorbent.	Quantity unknown, 55-gallon drum maximum at any one time.
SAP 78	1993 to 1997	Storage of small amounts of wastes.	Oily absorbent.	Quantity unknown, 55-gallon drum maximum at any one time.
SAP 79	1993 to 1997	Storage of small amounts of wastes.	Waste oil.	110-gallons, 55-gallon drum maximum at any one time.
SAP 80	1993 to 1997	Storage of small amounts of wastes.	Used absorbent pads.	Quantity unknown, 55-gallon drum maximum at any one time.
SAP 81	1993 to 1997	Storage of small amounts of wastes.	Oily absorbent socks.	Quantity unknown, 55-gallon drum maximum at any one time.
SAP 82	1993 to 1997	Storage of small amounts of wastes.	Grinding swarf.	Approximately 1400 pounds, 55-gallon drum maximum at any one time.
SAP 83	1993 to 1997	Storage of small amounts of wastes.	Oily rags from clean-up.	Four 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 84	1993 to 1997	Storage of small amounts of wastes.	Waste oil.	Eight 5 gallon drums, 55-gallon drum maximum at any one time.
SAP 85	1993 to 1997	Storage of small amounts of wastes.	Waste aerosol (gas).	Three 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 86	1993 to 1997	Storage of small amounts of wastes.	Used absorbents.	Two 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 87	1993 to 1997	Storage of small amounts of wastes.	1, 1, 1-trichloroethane.	Approximately 1.5 55 gallon drums, 55-gallon drum maximum at any one time.
SAP 88	1993 to 1997	Storage of small amounts of wastes.	Spent alcohol from clean up activities.	Approximately 55 gallons, 55-gallon drum maximum at any one time.
SAP 89	1993 to 1997	Storage of small amounts of wastes.	Spent glass beads from sandblasting activities.	Approximately 55-gallons.
SAP 90	1993 to 1997	Storage of small amounts of wastes.	Waste brazing flux.	Approximately two 5-gallon drums, 55-gallon drum maximum at any one time.
SAP 91	1994 to 1997	Storage of small amounts of wastes.	Used consumable batteries from flashlights, clocks, and pagers.	Approximately two 55-gallon drums, 55-gallon drum maximum at any one time.
SAP 92	1994 to 1997	Storage of small amounts of wastes.	Waste asbestos construction materials.	Approximately two 55-gallons, 55-gallon drum maximum at any one time.
SAP 93	1995 to 1997	Storage of small amounts of wastes.	Electrode slag surfacing generated from welding activities.	Approximate amount per year unknown, 55-gallon drum maximum at any one time.

Table 4.134-2 (continued)
AOCs SAPs 74, 76 and 78 through 107 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 94	1995 to 1997	Storage of small amounts of wastes.	Alkaline batteries generated from ship and shop operations.	Approximate amount per year unknown, 55-gallon drum maximum at any one time.
SAP 95	1995 to 1997	Storage of small amounts of wastes.	Oily rags.	Approximate amount per year unknown, 55-gallon drum maximum at any one time.
SAP 96	1995 to 1997	Storage of small amounts of wastes.	Waste absorbent pads.	Approximate amount per year unknown, 55-gallon drum maximum at any one time.
SAP 97	1992 to 1997	Storage of small amounts of wastes.	Waste 1,1,1-trichloroethane.	One 55-gallon drum.
SAP 98	1992 to 1997	Storage of small amounts of wastes.	Waste wood rosin.	One 55-gallon drum.
SAP 99	1992 to 1997	Storage of small amounts of wastes.	Contaminated rubber hoses.	One 55-gallon drum.
SAP 100	1992 to 1997	Storage of small amounts of wastes.	Oily absorbent material (Safe Step).	One 55-gallon drum.
SAP 101	1992 to 1997	Storage of small amounts of wastes.	Waste tungsten rods.	Approximate annual quantity unknown, no more than one 55-gallon drum at any one time.
SAP 102	1992 to 1997	Storage of small amounts of wastes.	Waste tungsten rods.	Approximately 50 pounds, no more than one 55-gallon drum at any one time.
SAP 103	1992 to 1997	Storage of small amounts of wastes.	Waste cobalt rods.	Approximate annual quantity unknown, no more than one 55-gallon drum at any one time.
SAP 104	1992 to 1997	Storage of small amounts of wastes.	Waste monel rods.	Approximately 100 pounds, no more than one 55-gallon drum per year.
SAP 105	1992 to 1997	Storage of small amounts of wastes.	Waste solvent cement soaked rags.	One 55-gallon drum.
SAP 106	1992 to 1997	Storage of small amounts of wastes.	Soaked oily rags.	One 55-gallon drum.
SAP 107	1992 to 1997	Storage of small amounts of wastes.	Waste isopropyl alcohol.	One 55-gallon drum.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

The EBS spill log indicates 9 reported spills at Building 132:

- 6 gallons of green dye spilled at the northwestern corner in 1992,
- 50 gallons of diesel fuel spilled at the southeastern corner in 1993,
- 300 gallons of fuel/water spilled at in 1993,
- 5 gallons of hydraulic fluid spilled at the southeastern corner in 1993,
- 5 gallons of hydraulic fluid spilled south of the building in 1993,
- 2 ounces of mercury spilled in 1993,

- 2 gallons of oil/water spilled in 1993,
- 20 gallons of diesel fuel/cutting oil spilled southeast of the building in 1993, and
- 5 containers of toluene diisocyanate spilled southeast of the building 132 in 1994.

These spills were not associated with the SAPs. These spills were likely contained and cleaned up according to Navy procedures.

4.134.3 Preliminary Assessment Resources

Table 4.134-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.134-3
AOCs SAPs 74, 76 and 78 through 107 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 132.
Hazardous Substance Spill Contingency Plan	1987	A. L. Burke Engineers	Describes the wastes generated at the Building 132.
Spill Log	1988 to 1996	LBNSY-ED	Indicates four spills at Building 132.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 132 operations and wastes generated.
Weekly SAP Inspection Forms	1992 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1992	LBNSY-ED	Initiation date of Building 132 SAPs.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 132 operations.

AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point

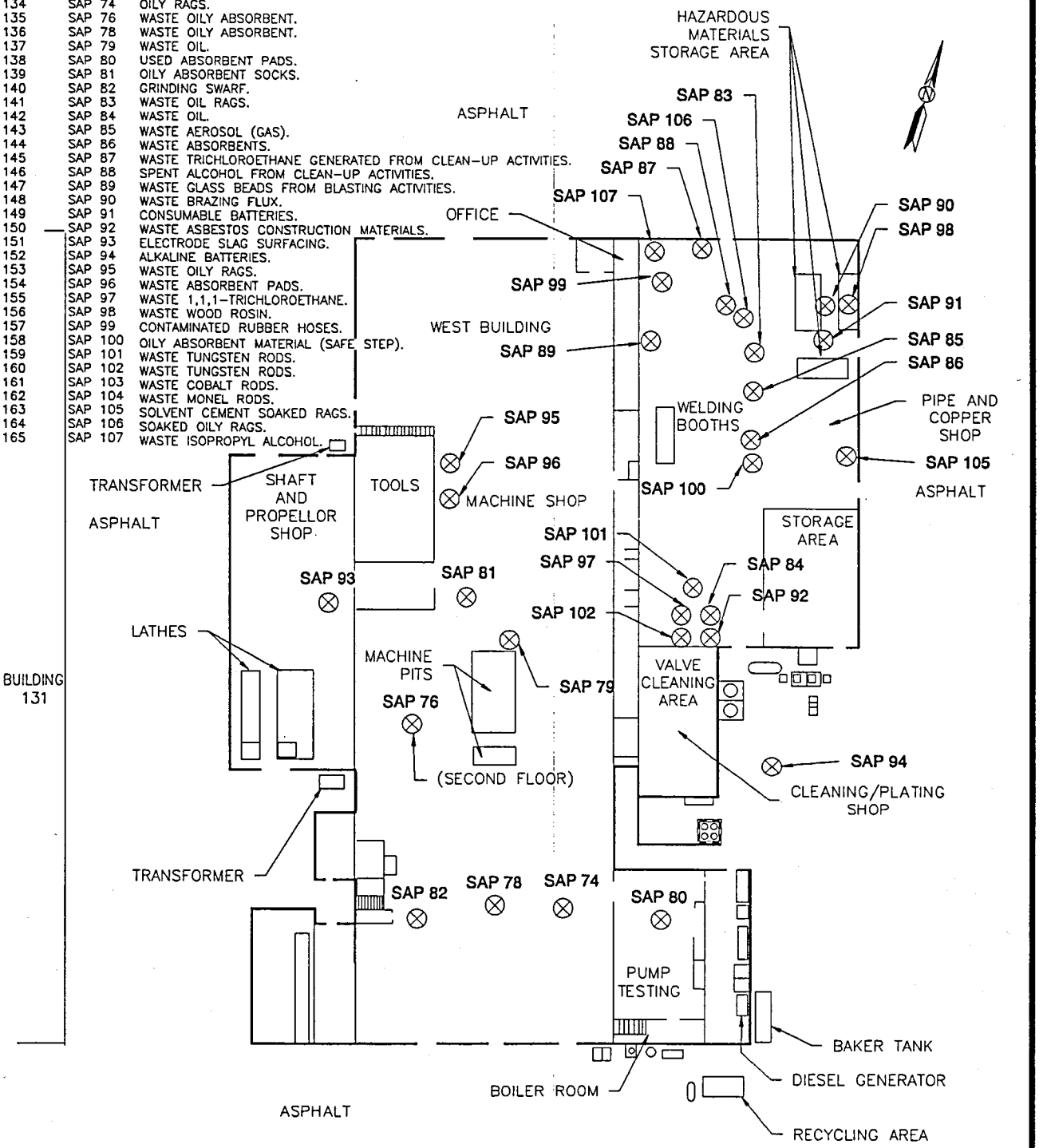
4.134.4 PA Recommendations

No further action is recommended for AOCs SAPs 74, 76, and 78 through 107 based on the following findings:

- The SAPs were operated for 5 years or less;
- They were located inside a covered building;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No floor staining was observed.

BUILDING 132 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
134	SAP 74	OILY RAGS.
135	SAP 76	WASTE OILY ABSORBENT.
136	SAP 78	WASTE OILY ABSORBENT.
137	SAP 79	WASTE OIL.
138	SAP 80	USED ABSORBENT PADS.
139	SAP 81	OILY ABSORBENT SOCKS.
140	SAP 82	GRINDING SWARF.
141	SAP 83	WASTE OIL RAGS.
142	SAP 84	WASTE OIL.
143	SAP 85	WASTE AEROSOL (GAS).
144	SAP 86	WASTE ABSORBENTS.
145	SAP 87	WASTE TRICHLOROETHANE GENERATED FROM CLEAN-UP ACTIVITIES.
146	SAP 88	SPENT ALCOHOL FROM CLEAN-UP ACTIVITIES.
147	SAP 89	WASTE GLASS BEADS FROM BLASTING ACTIVITIES.
148	SAP 90	WASTE BRAZING FLUX.
149	SAP 91	CONSUMABLE BATTERIES.
150	SAP 92	WASTE ASBESTOS CONSTRUCTION MATERIALS.
151	SAP 93	ELECTRODE SLAG SURFACING.
152	SAP 94	ALKALINE BATTERIES.
153	SAP 95	WASTE OILY RAGS.
154	SAP 96	WASTE ABSORBENT PADS.
155	SAP 97	WASTE 1,1,1-TRICHLOROETHANE.
156	SAP 98	WASTE WOOD ROSIN.
157	SAP 99	CONTAMINATED RUBBER HOSES.
158	SAP 100	OILY ABSORBENT MATERIAL (SAFE STEP).
159	SAP 101	WASTE TUNGSTEN RODS.
160	SAP 102	WASTE TUNGSTEN RODS.
161	SAP 103	WASTE COBALT RODS.
162	SAP 104	WASTE MONEL RODS.
163	SAP 105	SOLVENT CEMENT SOAKED RAGS.
164	SAP 106	SOAKED OILY RAGS.
165	SAP 107	WASTE ISOPROPYL ALCOHOL.



LEGEND

AOC = AREA OF CONCERN

SAP = SATELLITE ACCUMULATION POINT

SAP 78 ⊗ = SAP LOCATION AND NUMBER

0 50 100 150

APPROXIMATE SCALE IN FEET

NOTE: THE FORMER LOCATION OF 2 SAP ARE UNKNOWN (SAPs 103 AND 104)

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SATELLITE ACCUMULATION POINT AOCs BUILDING 132	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.134-1	4.134-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.134-2 Satellite Accumulation Point (AOC SAP 74), Building 132
Facing East 3/11/98

Figure 4.134-3 Satellite Accumulation Point (AOC SAP 76), Building 132
Empty Drum, Facing East 3/11/98

Figure 4.134-4 Satellite Accumulation Point (AOC SAP 79), Building 132
Empty Containers, Facing Southwest 3/11/98

Figure 4.134-5 Satellite Accumulation Point (AOC SAP 80), Building 132
Empty Containers, Facing North 3/11/98

Figure 4.134-6 Satellite Accumulation Point (AOC SAP 81), Building 132 Facing West 3/11/98

Figure 4.134-7 Satellite Accumulation Point (AOC SAP 82), Building 132 Facing West 3/11/98

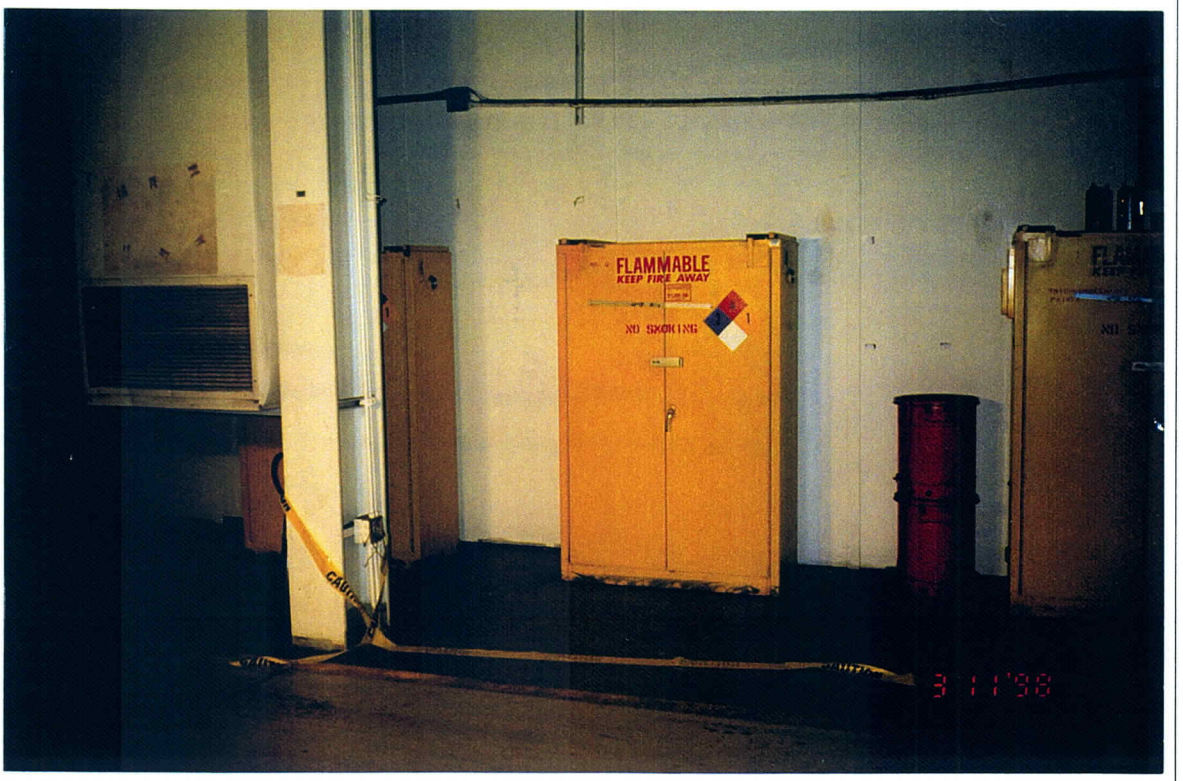

Figure 4.134-8 Satellite Accumulation Point (AOC SAP 83), Building 132
Empty Locker, Facing East 3/11/98

Figure 4.134-9 Satellite Accumulation Points (AOC SAPS 84, 92, 101), Building 132
Approximate Location, Facing West 3/11/98

Figure 4.134-10 Satellite Accumulation Point (AOC SAP 85), Building 132
Empty Locker, Facing East 3/11/98

Figure 4.134-11 Satellite Accumulation Point (AOC SAP 86), Building 132
Empty Drum, Facing South 3/11/98

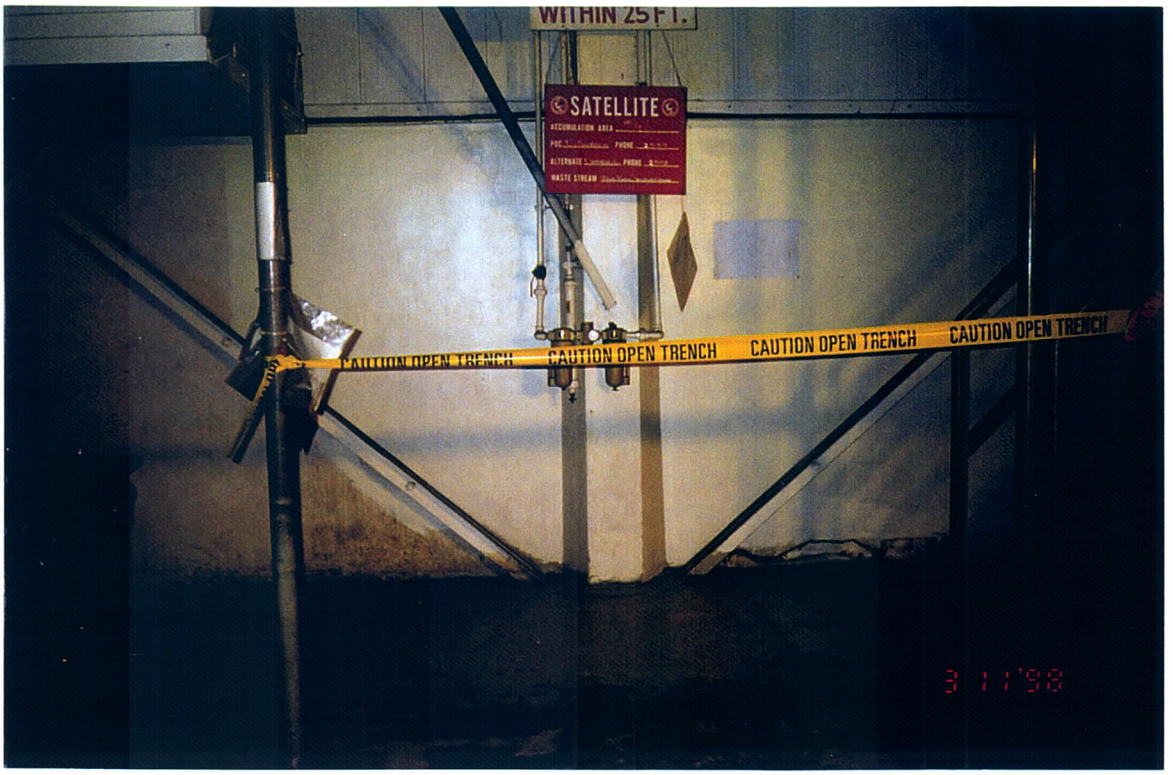

Figure 4.134-12 Satellite Accumulation Points (AOC SAPs 87, 97), Building 132 Facing South 3/11/98

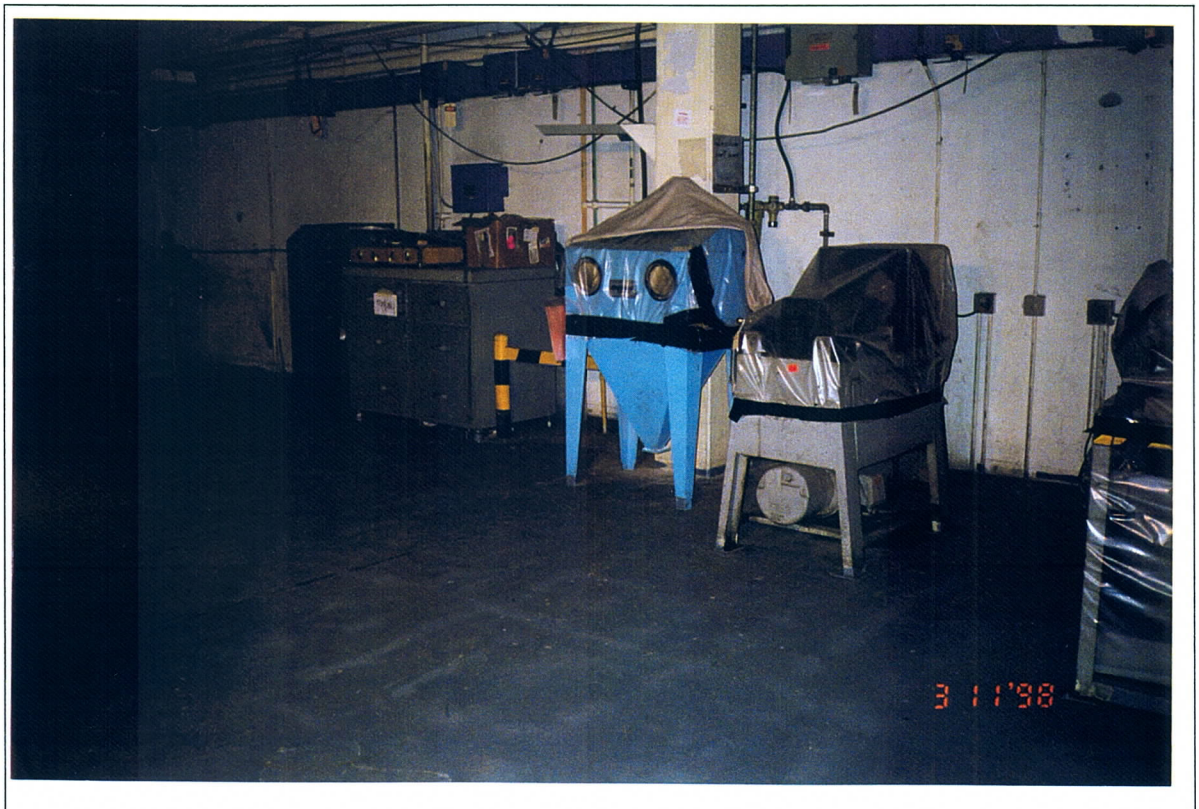

Figure 4.134-13 Satellite Accumulation Point (AOC SAP 88), Building 132 Facing Southwest 3/11/98

Figure 4.134-14 Satellite Accumulation Point (AOC SAP 89), Building 132
Facing Southwest 3/11/98

Figure 4.134-15 Satellite Accumulation Point (AOC SAP 90), Building 132
Empty Drum, Facing North 3/11/98

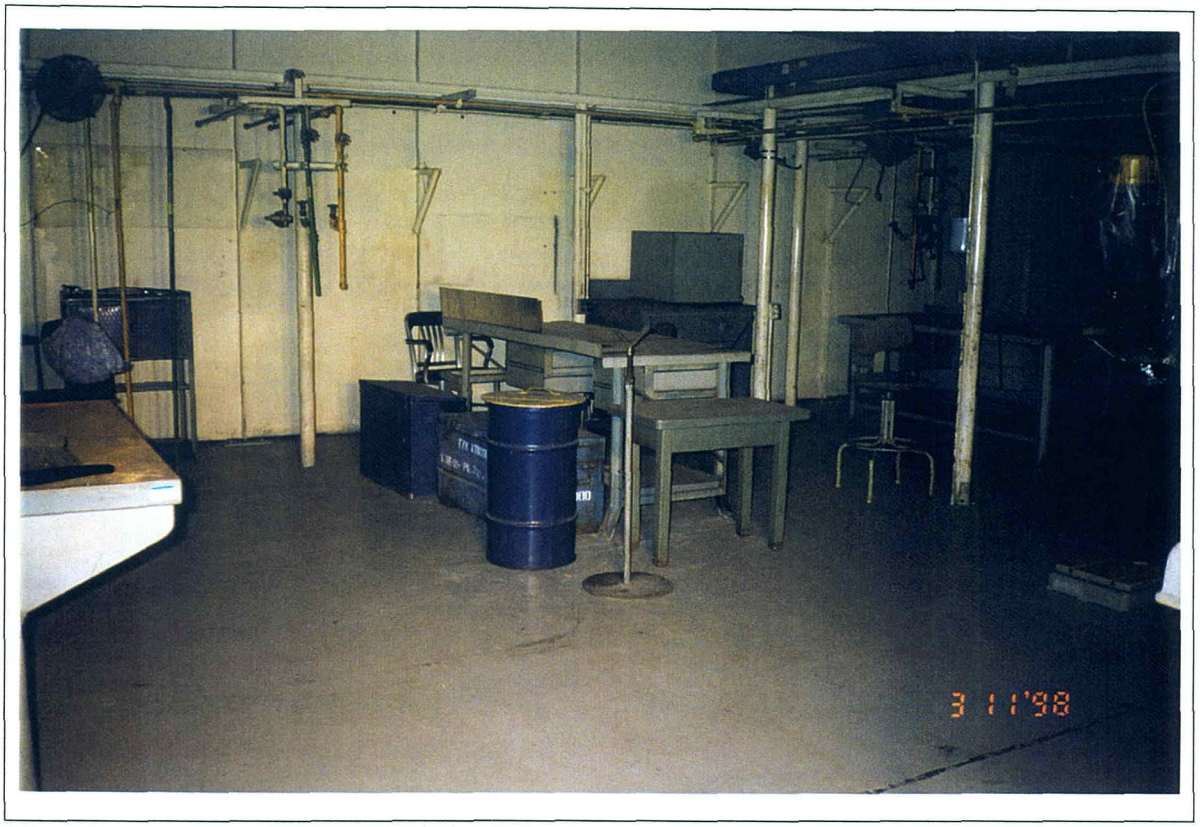

Figure 4.134-16 Satellite Accumulation Point (AOC SAP 91), Building 132
Empty Drum, Facing North 3/11/98

Figure 4.134-17 Satellite Accumulation Point (AOC SAP 95), Building 132
Facing North 3/11/98

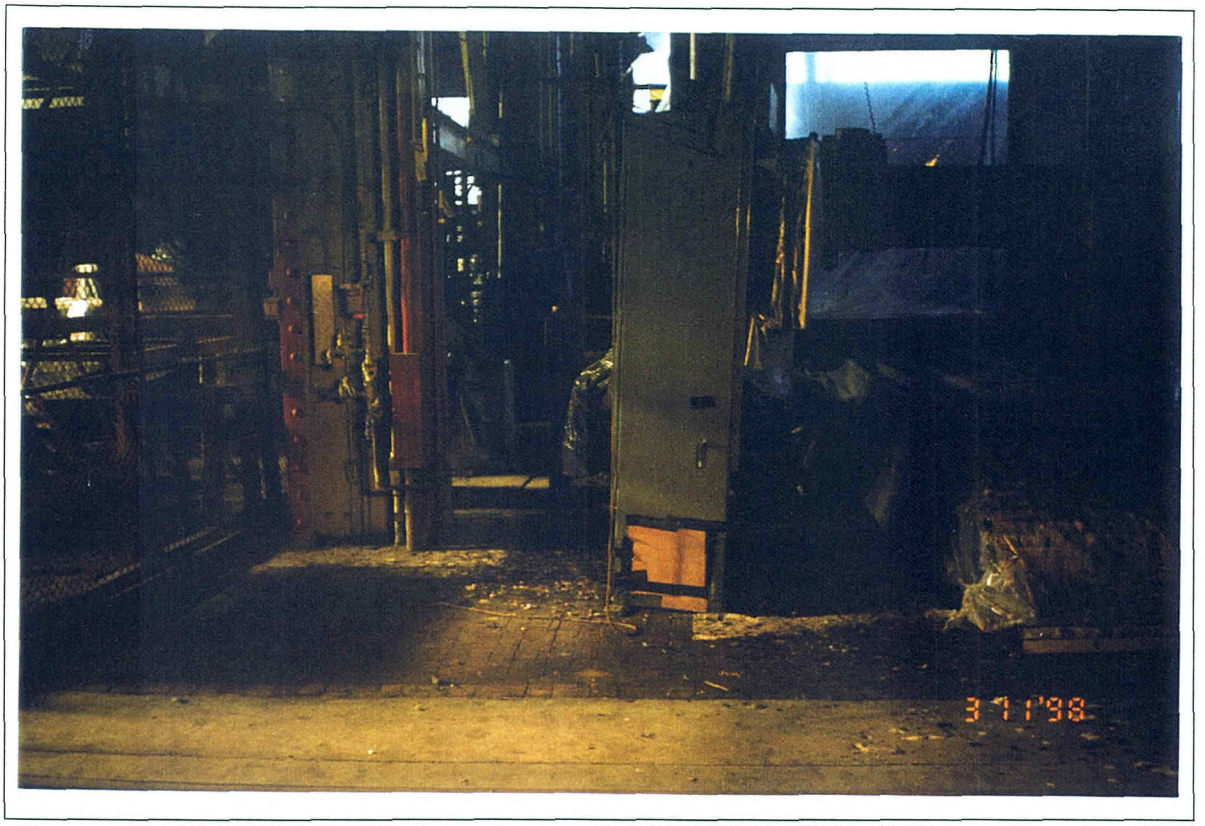

Figure 4.134-18 Satellite Accumulation Point (AOC SAP 96), Building 132
Facing North 3/11/98

Figure 4.134-19 Satellite Accumulation Point (AOC SAP 98), Building 132
Empty Drum, Facing Southwest 3/11/98

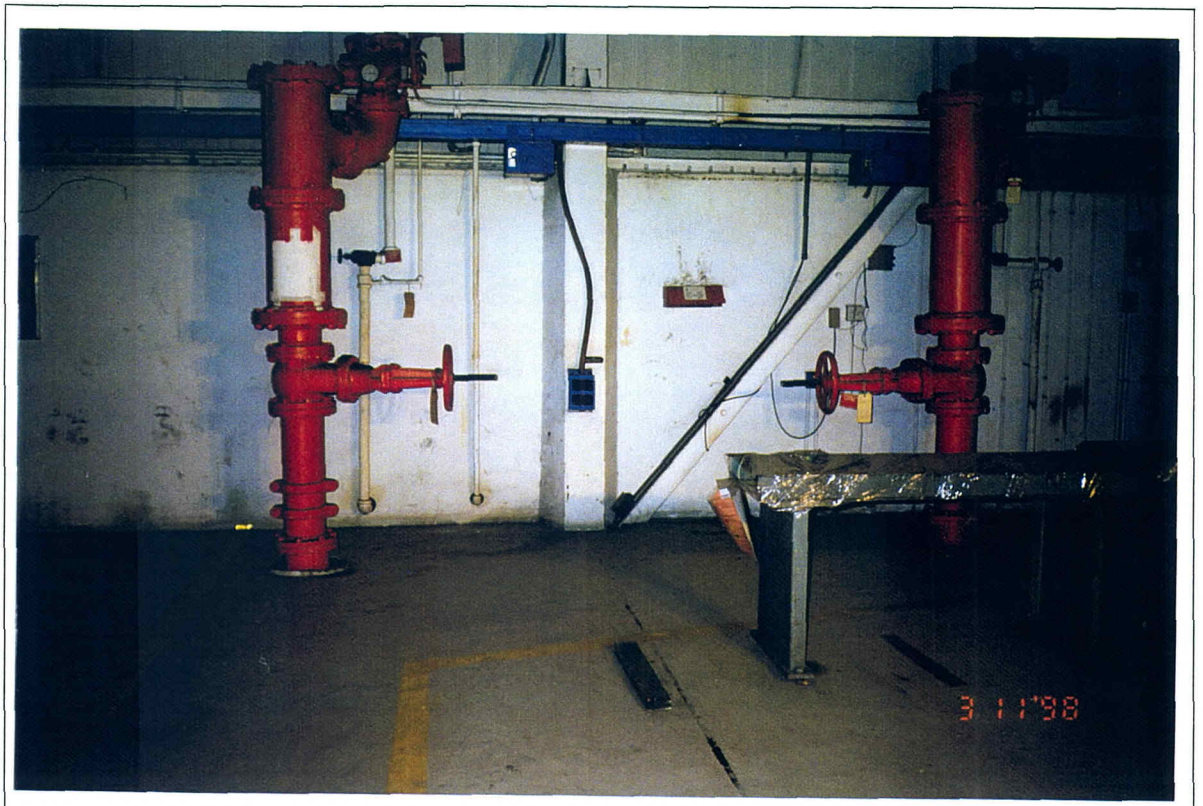

Figure 4.134-20 Satellite Accumulation Point (AOC SAP 105), Building 132 Facing East 3/11/98

Figure 4.134-21 Satellite Accumulation Point (AOC SAP 106), Building 132 Facing East 3/11/98

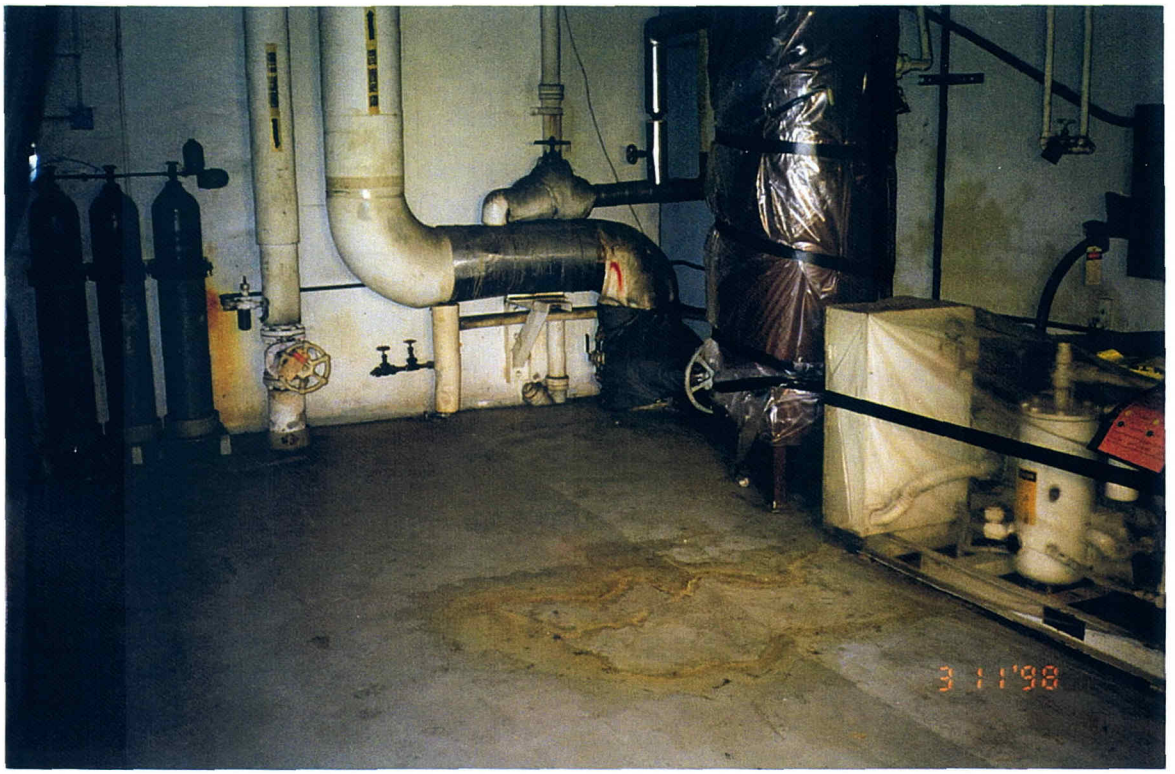

Figure 4.134-22 Satellite Accumulation Point (AOC SAP 107), Building 132 Facing West 3/11/98

4.166 to 4.171 SATELLITE ACCUMULATION POINTS, BUILDING 202 (AOCs SAPs 108, 109, and 111 through 114)

A description of the SAPs located at Building 202, the building's operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.166.1 to 4.166.4. All six SAPs located in Building 202 (numbered 166 to 171 in Tables 1-1 and 4.166-1) are addressed in this section. Note that SAP 110 was a SAP at Building 204 that contained used garnet from sandblasting activities.

4.166.1 Site Description

Six SAPs were located inside the painting booths of Building 202. During the March 1998 site reconnaissance, Building 202 was no longer in use and the SAP drums were no longer in place. Table 4.166-1 summarizes the location and characteristics of AOC SAPs 108, 109, and 111 to 114. A site map is provided as Figure 4.166-1. Site photographs are shown in Figures 4.166-2 to 4.166-7.

Building 202 was used for painting and sandblasting activities from its construction in 1978. The SAPs were used in association with Building 202 painting operations, which consisted of three booths approximately 60 feet long by 40 feet wide by 50 feet in height. Most of the paint waste was collected in sumps beneath the metal grating floor of each paint booth. The remaining waste epoxy and waste enamel paint were temporarily stored in the SAPs.

AOC UST 4 addressing paint wash tanks 202.1, 202.2, and 202.3 is addressed in Section 4.178.

Table 4.166-1
AOCs SAPs 108, 109, and 111 through 114 Site Description

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
166	SAP 108	202-71-1	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.
167	SAP 109	202-71-2	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.
168	SAP 111	202-71-3	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.
169	SAP 112	202-71-4	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.
170	SAP 113	202-71-5	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.
171	SAP 114	202-71-6	Building 202, Painting Booth.	D-31, E-31, D-32, E-32	Small volume SAP for waste epoxy and enamel paint.	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

4.166.2 Operational History and Waste Characteristics

Table 4.166-2 summarizes the operational history and waste characteristics. Section 4.178 describes the painting and paint wash activities. Use of the SAPs ceased in 1996 when waste-generating activities in Building 202 ceased.

Table 4.166-2
AOCs SAPs 108, 109, and 111 through 114
Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 108	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 109	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 111	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 112	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 113	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.
SAP 114	1994 to 1996	Storage of small amounts of wastes.	Waste epoxy and enamel paint.	Approximate annual quantity unknown, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

4.166.3 Preliminary Assessment Resources

Table 4.166-3 summarizes the resources used and interviews conducted in this PA evaluation.

Table 4.166-3
AOCs SAPs 108, 109, and 111 through 114
Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 202.
Weekly SAP Inspection Forms	1994 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1994	LBNSY-ED	Initiation date of Building 202 SAPs.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 202 operations.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
SAP = Satellite Accumulation Point

4.166.4 PA Recommendations

No further action is recommended for AOCs SAPs 108, 109, and 111 through 114, based on the following findings:

- The SAPs operated for only 2 years;
- They were located on concrete inside a covered building;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No concrete floor staining was observed.

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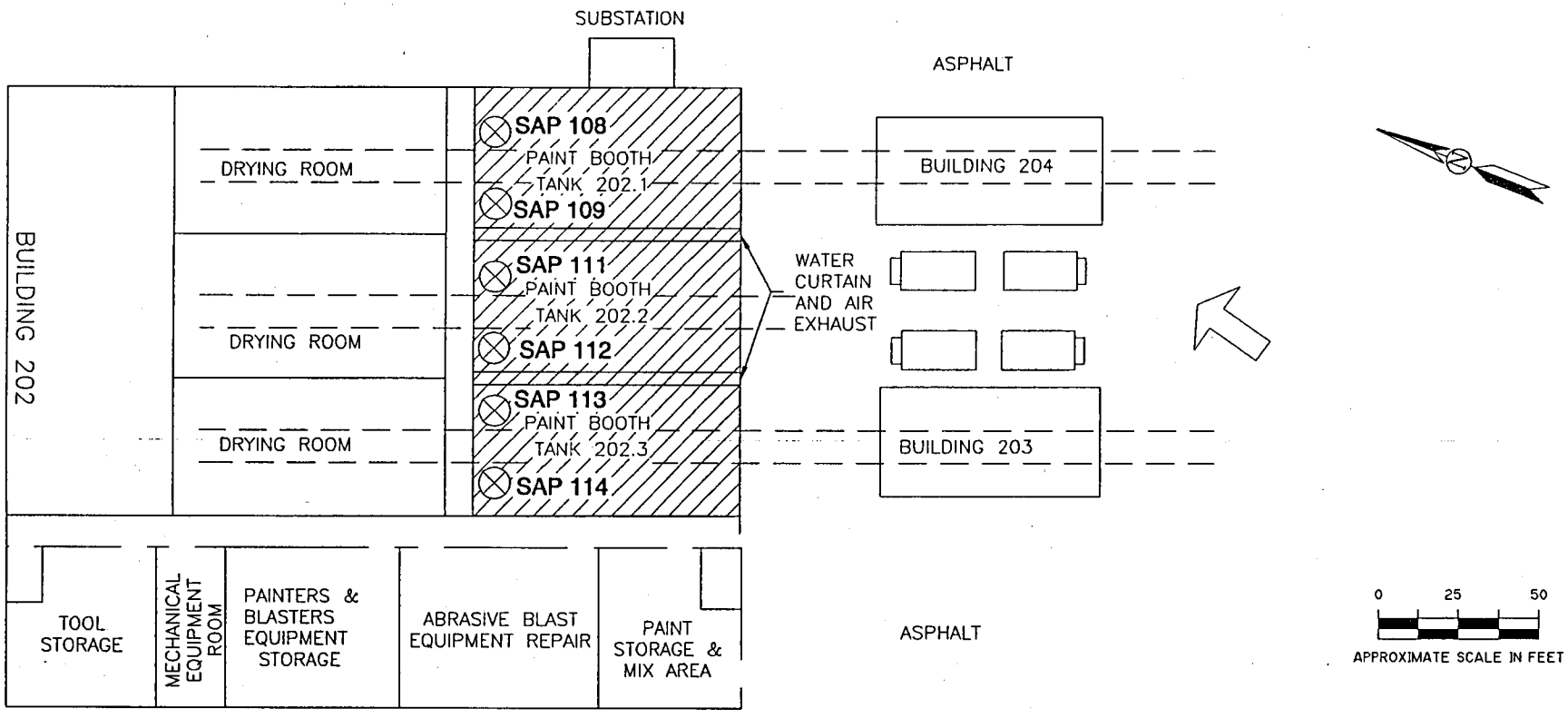


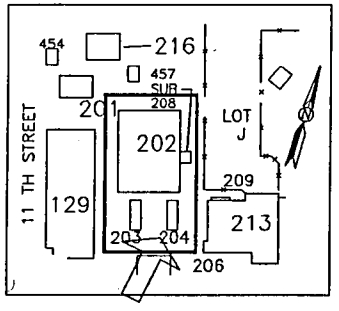
LEGEND

AOC = AREA OF CONCERN
SAP = SATELLITE ACCUMULATION POINT
UST = UNDERGROUND STORAGE TANK
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= CHAIN LINK FENCE
= RAIL LINES
= SAP LOCATION

BUILDING 202 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
166	SAP 108	EPOXY AND ENAMEL PAINT
167	SAP 109	EPOXY AND ENAMEL PAINT
168	SAP 111	EPOXY AND ENAMEL PAINT
169	SAP 112	EPOXY AND ENAMEL PAINT
170	SAP 113	EPOXY AND ENAMEL PAINT
171	SAP 114	EPOXY AND ENAMEL PAINT

AREA LOCATION MAP



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
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DATE: 5/99
FN: 4.166-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC SAPs 108, 109, 111,112,113,114
SATELLITE ACCUMULATION POINTS, BUILDING 202

GROUP B AREAS OF CONCERN

FIGURE
4.166-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.166-S

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Figure 4.166-2 Outside Paint Booth 1 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

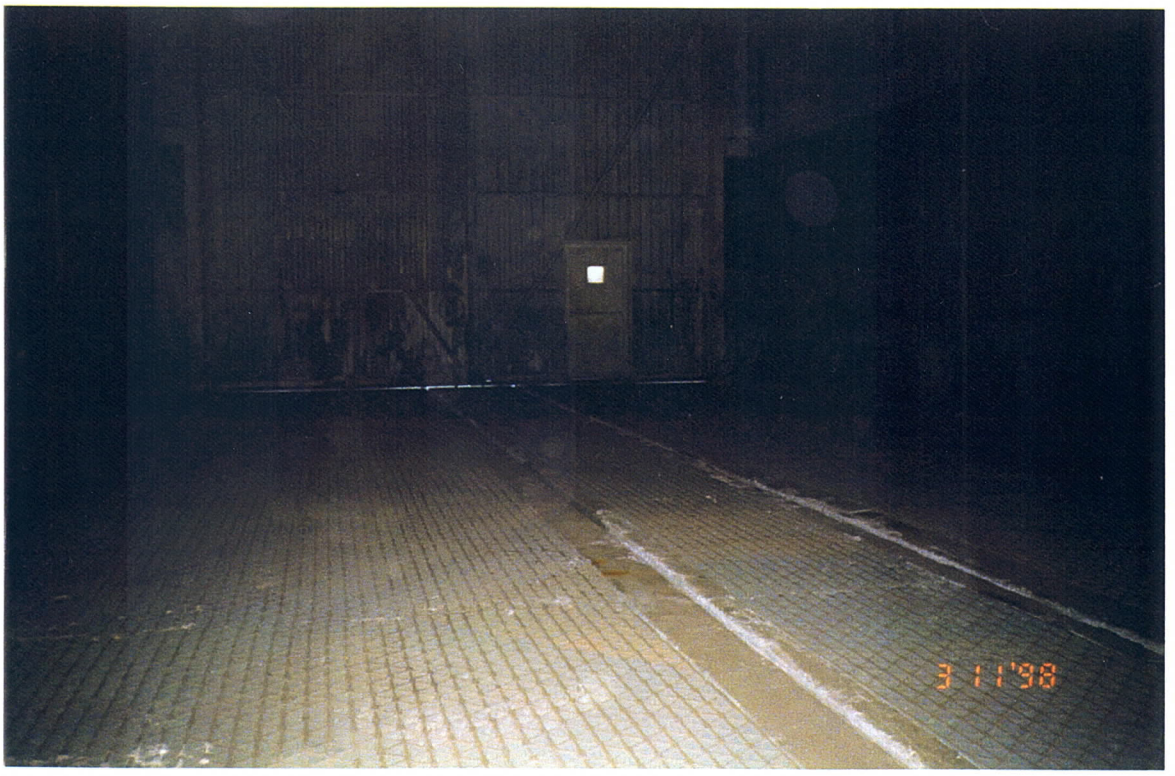


Figure 4.166-3 Inside Paint Booth 1 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

Figure 4.166-4 Outside Paint Booth 2 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

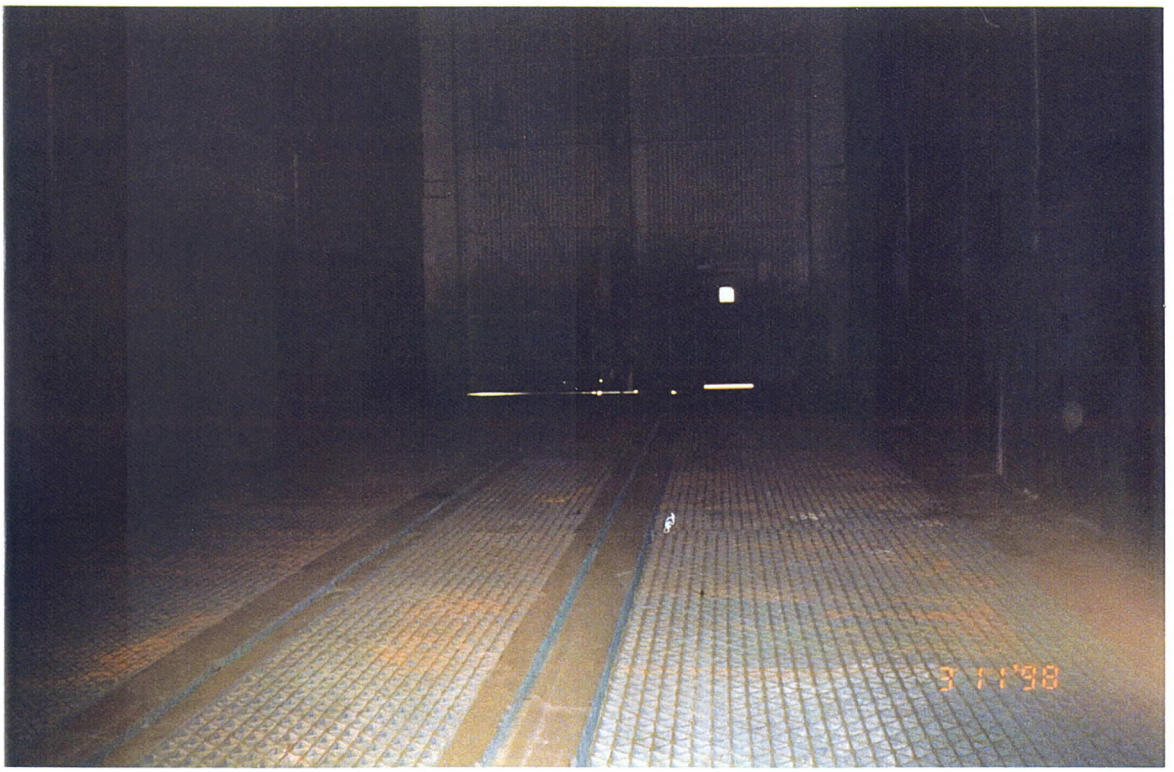


Figure 4.166-5 Inside Paint Booth 2 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

Figure 4.166-6 Outside Paint Booth 3 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

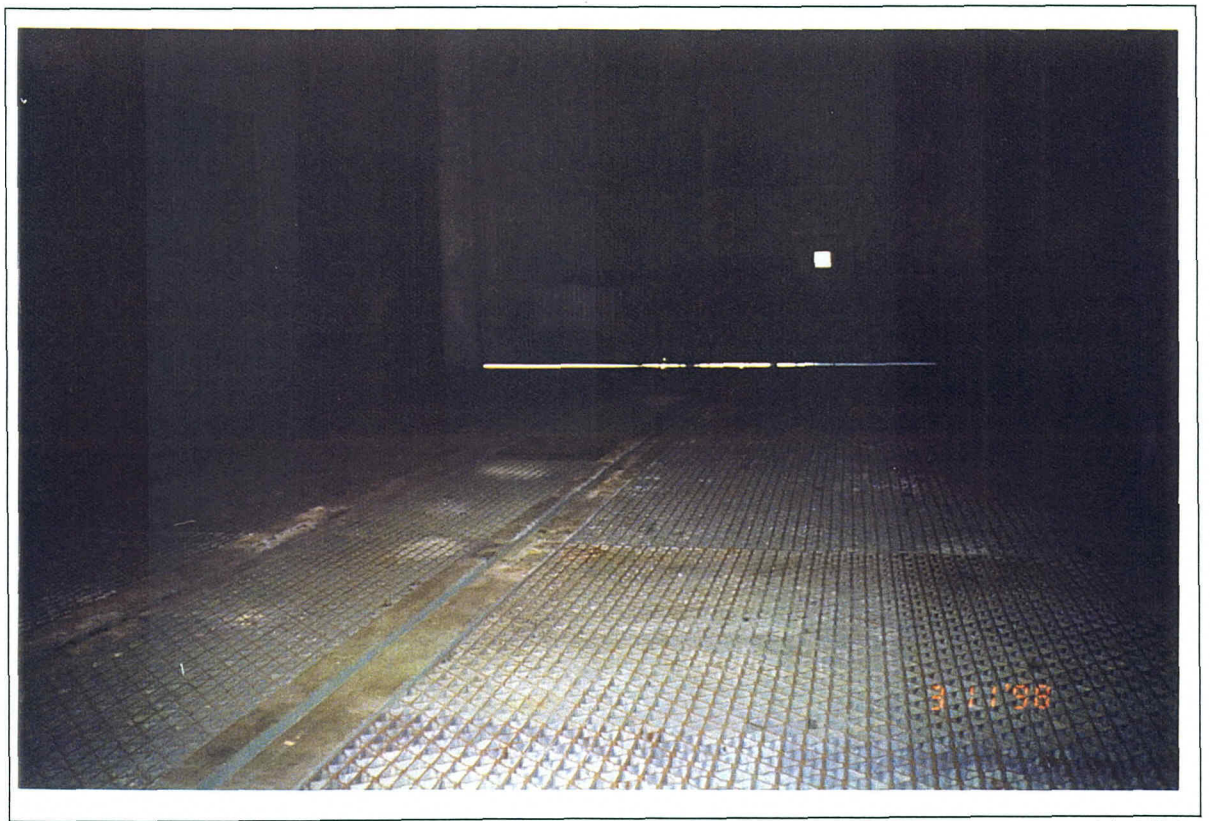


Figure 4.166-7 Inside Paint Booth 3 (AOC SAPs 108 to 114), Building 202 Facing South 3/11/98

4.172 WASTE PAINT (SOLID) SATELLITE ACCUMULATION POINT, BUILDING 210 (AOC SAP 133)

A description of AOC SAP 133 located at Building 210, the building's operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.172.1 to 4.172.4.

4.172.1 Site Description

During the March 1998 site reconnaissance, this AOC was no longer in use and the drum was no longer in place. Table 4.172-1 summarizes the location and characteristics of AOC SAP 133. A site map is provided as Figure 4.172-1. A site photograph is shown in Figures 4.172-2.

Solid (dried) paint waste from the paint booth in the southern portion of Building 210 was stored in a 55-gallon drum at this AOC.

Table 4.172-1
AOC SAP 133 Site Description

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
172	SAP 133	210-71-25	Building 210, Paint Booth, Column E-5.	E-26	Small volume SAP for waste paint (solid).	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

4.172.2 Operational History and Waste Characteristics

Table 4.172-2 summarizes the operational history and waste characteristics. Use of the SAP ceased in 1996 when waste-generating activities in Building 210 ceased.

Table 4.172-2
AOC SAP 133 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 133	1993 to 1996	Storage of small amounts of wastes.	Waste paint (solid).	900 pounds, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

The EBS spill log indicates six reported spills at Building 210; however, these spills were not associated with this SAP. These spills were likely contained and cleaned according to Navy procedures.

4.172.3 Preliminary Assessment Resources

Table 4.172-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.172-3
AOC SAP 133 Preliminary Assessment Resources Summary

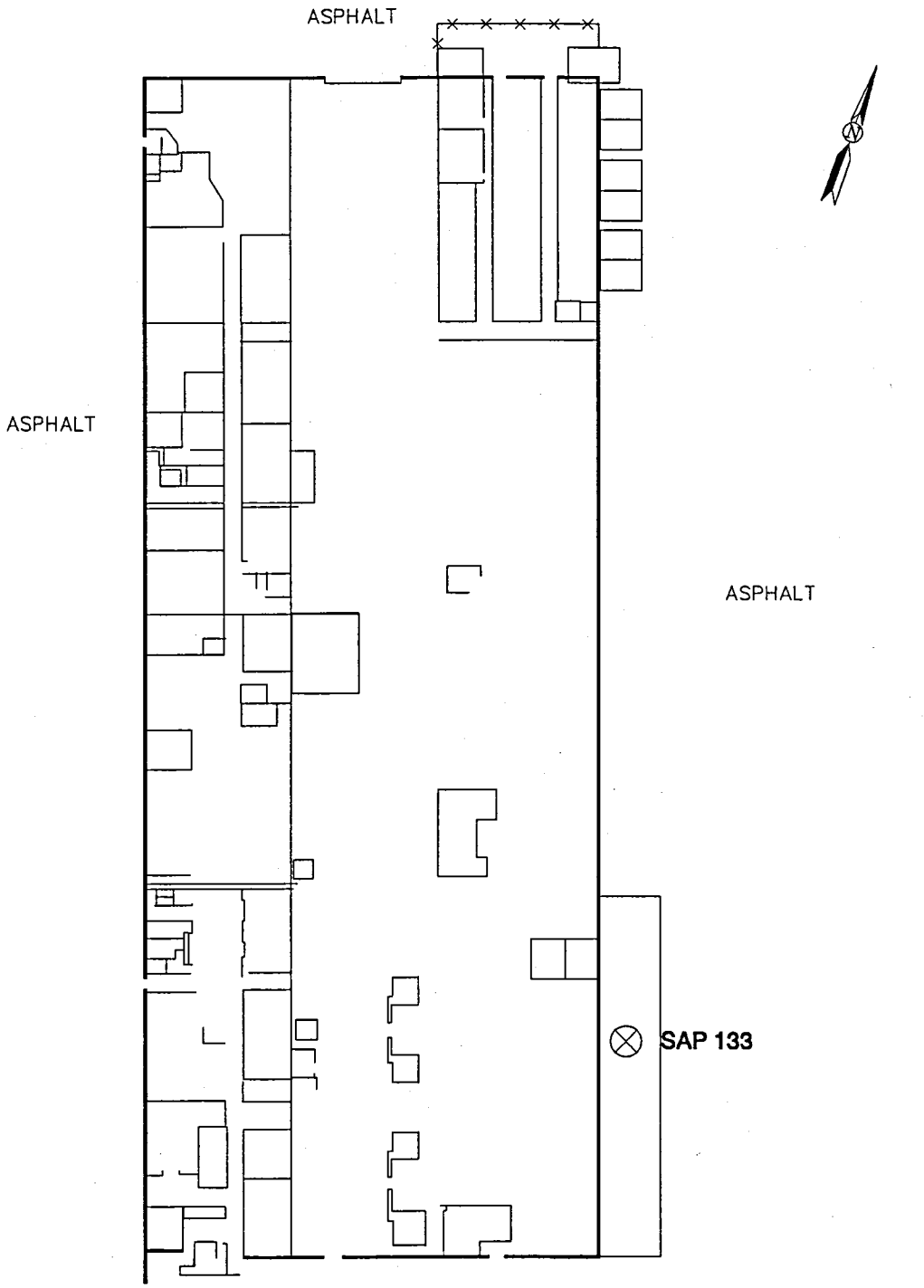
Resource	Date	Source	Summary
Toxic and Hazardous Waste Procedures Survey	1980	Brown and Caldwell	General Building 210 operations.
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 210.
Spill Log	1988 to 1996	LBNSY-ED	Indicates six spills at Building 210.
RCRA Facility Assessment	1989	DTSC	General Building 210 operations.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 210 operations and wastes generated.
Weekly SAP Inspection Forms	1993 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1993	LBNSY-ED	Initiation date of Building 210 SAPs.
LBNSY Group A POIs	1997	LBNSY-ED	General information concerning operations at Building 210.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 210 operations.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
POIs = Points of Interest
RCRA = Resource Conservation and Recovery Act
SAP = Satellite Accumulation Point

4.172.4 PA Recommendations

No further action is recommended for AOC SAP 133 based on the following findings:

- The SAP was operated for only 3 years;
- Only solid wastes were stored;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No ground staining was observed.



LEGEND

SAP = SATELLITE ACCUMULATION POINT

AOC = AREA OF CONCERN

SAP 133 ⊗ = SAP LOCATION

BUILDING 210 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
172	SAP 133	WASTE PAINT (SOLIDS)

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC SAP 133 SATELLITE ACCUMULATION POINT BUILDING 210	FIGURE 4.172-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.172-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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Figure 4.172-2 Satellite Accumulation Point (SAP 133), Building 210, Facing South 3/11/98

4.173 WASTE GASOLINE AND DIESEL SATELLITE ACCUMULATION POINT, BUILDING 356 (AOC SAP 146)

A description of the Waste Gasoline and Diesel Satellite Accumulation Point at Building 356 (AOC SAP 146), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.173.1 to 4.173.4.

4.173.1 Site Description

AOC SAP 146 was located at the former LBNSY gasoline station south of Building 101. During the March 1998 site reconnaissance, the gasoline station was no longer in use and the SAP drum was no longer in place. Table 4.173-1 summarizes the location and characteristics of AOC SAP 146. A site map is provided as Figure 4.173-1. A site photograph is shown in Figure 4.173-2.

One additional AOC associated with this SAP was investigated as part of this investigation. AOC MISC 7 (Section 4.59) includes the former gasoline station and USTs 356 to 362 and 369 to 376 and 101.1 through 101.6.

Table 4.173-1
AOC SAP 146 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
SAP 146	Building 356	D-24	Small volume SAP for waste gasoline and diesel.	Metal drum.	55-gallons.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

During the March 1998 site reconnaissance, the approximate SAP location was inspected. The SAP was no longer in use, and no evidence of staining was found.

4.173.2 Operational History and Waste Characteristics

Table 4.173-2 summarizes the operational history and waste characteristics.

Table 4.173-2
AOC SAP 146 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
SAP 146	1993 to 1996	Storage of small amounts of wastes.	Waste gasoline and diesel.	One 55-gallon drum per year.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

The spill log indicates no reported spills at Building 356. No problems were noted at the SAP during weekly inspections.

Asphalt and soil beneath this SAP were removed in 1997 as part of the removal of USTs at the Shipyard Gasoline Station, as described in Section 4.59.

4.173.3 Preliminary Assessment Resources

Table 4.173-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.173-3
AOC SAP 146 Preliminary Assessment Resources Summary

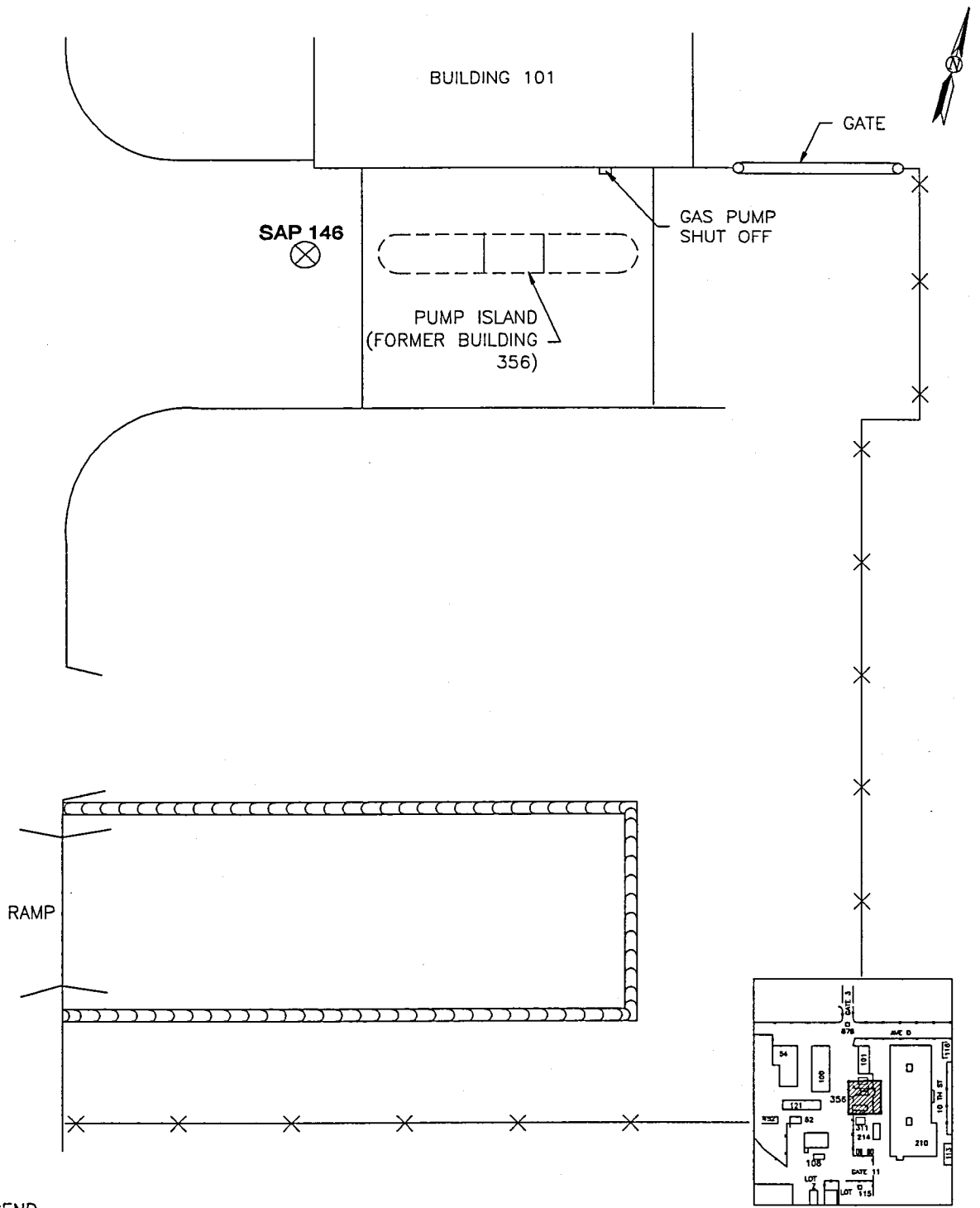
Resource	Date	Source	Summary
Spill Log	1988 to 1996	LBNSY-ED	Indicates no spills at Building 356.
Weekly SAP Inspection Forms	1993 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1993	LBNSY-ED	Initiation date of Building 356 SAP.
EBS	1996	LBNSY-ED	SAP database information.
SPCC Plan	1996	AeroVironment	Describes former gasoline station and activities.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 356 operations.

AOC = Area of Concern
EBS = Environmental Baseline Survey
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
SAP = Satellite Accumulation Point
SPCC = Oil Spill Prevention, Control, and Countermeasures Plan

4.173.4 PA Recommendations

No further action is recommended for AOC SAP 146 for the following reasons:

- This SAP was operated for only 3 years;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No staining was observed.
- All asphalt and soil from under this AOC was removed and disposed as part of the UST removal described in Section 4.59 for the Shipyard Gasoline Station.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC SAP 146 SATELLITE ACCUMULATION POINT BUILDING 356 GROUP B AREAS OF CONCERN	FIGURE 4.173-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.173-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.173-2 Satellite Accumulation Point (SAP 146), Building 356 Facing East 9/22/98

4.174 CHROME-STAINED RAGS AND TAPE SATELLITE ACCUMULATION POINT, BUILDING 210 (AOC SAP 171)

A description of AOC SAP 171 located at Building 210, its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.174.1 to 4.174.4.

4.174.1 Site Description

During the March 1998 site reconnaissance, the AOC was no longer in use and the drum was no longer in place. Table 4.174-1 summarizes the location and characteristics of AOC SAP 171. A site map is provided as Figure 4.174-1. A site photograph is shown in Figures 4.174-2.

AOC SAP 171 was most likely associated with the plating shop in the northeastern corner of Building 210 (AOC PT 1; Section 4.65 of this report).

Table 4.174-1
AOC SAP 171 Site Description

Table 1-1 No.	AOC No.	SAP ID No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
174	SAP 171	210-51-9	Building 210, Outside Northeast, Column E-25.	E-26	Small volume SAP for chrome-stained rags and tape.	Metal drum.	55-gallons.

AOC = Area of Concern
ID = Identification
No. = Number
SAP = Satellite Accumulation Point

4.174.2 Operational History and Waste Characteristics

Table 4.174-2 summarizes the operational history and waste characteristics. The SAP was no longer used after operations ceased in Building 210 in 1996.

Table 4.174-2
AOC SAP 171 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Annual Quantity
SAP 171	1993 to 1996	Storage of small amounts of wastes.	Chrome stained rags and tape.	300 pounds, 55-gallon drum maximum at any one time.

AOC = Area of Concern No. = Number SAP = Satellite Accumulation Point

The EBS spill log indicates six reported spills at Building 210; however, these spills were not associated with the SAP. These spills were likely contained and cleaned according to Navy procedures.

4.174.3 Preliminary Assessment Resources

Table 4.174-3 summarizes the resources used and interviews conducted in the evaluation.

Table 4.174-3
AOC SAP 171 Preliminary Assessment Resources Summary

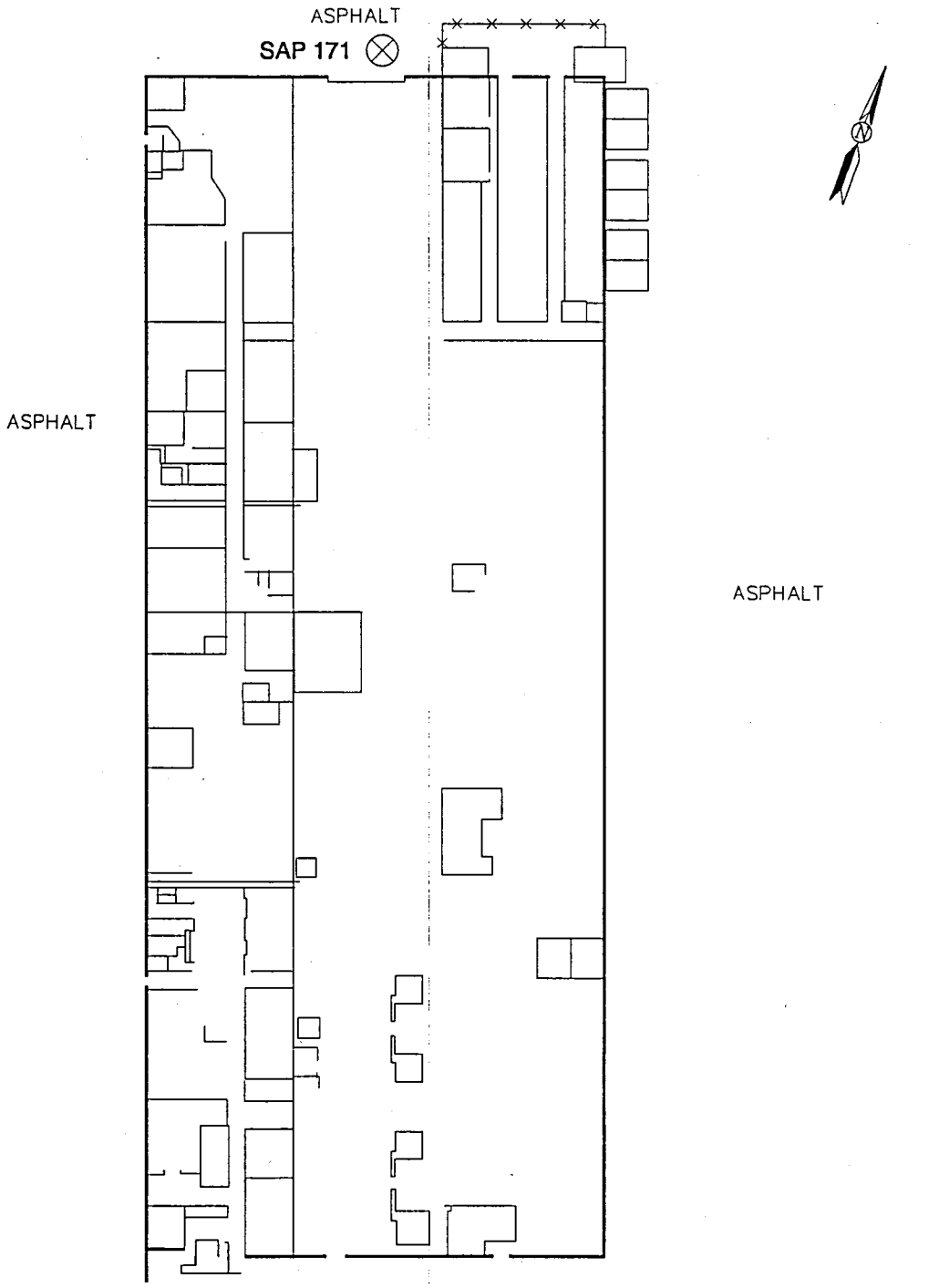
Resource	Date	Source	Summary
Toxic and Hazardous Waste Procedures Survey	1980	Brown and Caldwell	General Building 210 operations.
Initial Assessment Study	1983	NEESA	General operations and wastes generated at Building 210.
Spill Log	1988 to 1996	LBNSY-ED	Indicates six spills at Building 210.
RCRA Facility Assessment	1989	DTSC	General Building 210 operations.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 210 operations and wastes generated.
Weekly SAP Inspection Forms	1993 to 1996	LBNSY-ED	No problems noted during weekly inspections.
SAP Files	1993	LBNSY-ED	Initiation date of Building 210 SAPs.
LBNSY Group A POIs	1997	LBNSY-ED	General information concerning operations at Building 210.
Personnel Interview	1998	Johnson, Nunn, LBNSY	Provided information on Building 210 operations.

AOC = Area of Concern
DTSC = Department of Toxic Substances Control
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
POIs = Points of Interest
RCRA = Resource Conservation and Recovery Act
SAP = Satellite Accumulation Point

4.174.4 PA Recommendations

No further action is recommended for AOC SAP 171 based on the following findings:

- The SAP was operated for only 3 years;
- Only solid wastes were stored;
- Wastes were properly contained;
- No problems were noted during weekly SAP inspections by LBNSY-ED; and
- No ground staining was observed.



LEGEND

SAP = SATELLITE ACCUMULATION POINT

AOC = AREA OF CONCERN

SAP 171 ⊗ = SAP LOCATION

BUILDING 210 SAP AOCs

TAB NO.	SAP NO.	DESCRIPTION
174	SAP 171	CHROME-STAINED RAGS AND TAPE

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.174-1
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

AOC SAP 171
SATELLITE ACCUMULATION POINT
BUILDING 210

GROUP B AREAS OF CONCERN

FIGURE
4.174-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.174-2 Satellite Accumulation Point (SAP 171), Building 210 Facing South 3/11/98

4.175 FUEL OIL TANKS 128.1 AND 128.2 AND PUMP VAULT 128.3 (AOC UST 1)

A description of the Fuel Oil Tanks 128.1 and 128.2 and Pump Vault 128.3 (AOC UST 1), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.175.1 to 4.175.4.

4.175.1 Site Description

Table 4.175-1 summarizes the location and characteristics of AOC UST 1. A site map is provided as Figure 4.175-1. A site photograph is shown in Figure 4.175-2.

Table 4.175-1
AOC UST 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 1	Outside northwestern corner of Building 128.	C-28	Tanks containing diesel fuel and associated pump.	Two tanks and one pump vault.	128.1: 10,000-gallon steel tank. 128.2: 6,700-gallon steel tank. 128.3: concrete pump vault.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Fuel Oil Tanks 128.1 and 128.2 were single-walled steel vessels that were constructed for diesel fuel storage to be used for the foundry furnace at Building 128. The two tanks were located outside the northwestern corner of Building 128. The USTs were completely encased in reinforced concrete. A concrete pump vault, identified as UST 128.3, was located adjacent to the two tanks and was used to transfer the diesel fuel from the tanks to the foundry (OHM 1998). During the March 1998 site reconnaissance, the site was observed to be paved with new asphalt where the USTs had been removed in 1997.

4.175.2 Operational History and Waste Characteristics

Table 4.175-2 summarizes the operational history and waste characteristics.

Table 4.175-2
AOC UST 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 1	1943 to 1996	Diesel fuel tanks and associated pump/piping for foundry furnace in Building 128.	Diesel fuel, paint waste, and waste from other shipyard activities.	Varied depending on the use of the foundry.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

The two diesel fuel tanks and pump vault were constructed in 1943 in association with the foundry located inside Building 128. The tanks were originally used for storage of diesel fuel, and then subsequently used for the disposal of paint and other waste from LBNSY activities. There were no records to indicate when the diesel fuel operations ceased.

USTs 128.1 and 128.2 and the Pump Vault (128.3) were removed from the ground in January 1997 as part of closure activities for the tanks. Soil removal and remediation was required based on soil sampling conducted adjacent to the tanks. Approximately 335 cubic yards of soil were removed from the area surrounding the former tanks. Samples were collected to verify that vadose-zone soil was clean. In 1998, the regulatory agencies and the Long Beach City Fire Department (lead agency on UST removals at LBNSY) approved closure for soils at the former UST site. However, analytical results from saturated zone soil and groundwater samples indicated that certain contaminants were present above respective regulatory levels. The Final Remediation Closure Report for the Building 128 Underground Storage Tank Sites recommended that further investigation of groundwater contamination be conducted at the site (OHM 1998).

In August 1998, CDM Federal conducted additional groundwater sampling at depths ranging from 20 to 42 feet bgs. Twelve groundwater samples were collected and analyzed for VOCs, SVOCs, PCBs, dissolved metals, TPH-gasoline, TPH-diesel, and TPH-oil. The sample results indicated that no analytes (except for one analyte [BEHP at 0.016 mg/L] that was not a site contaminant of concern) exceeded their respective water quality objectives. The groundwater investigation results reported in the Final Closure Report, dated January 1999, indicate that no further action is required for groundwater and closure of the site is recommended (CDM Federal 1999b). Site closure was approved for no further action by the LA RWQCB in a letter dated 19 February 1999 (Appendix F).

4.175.3 Preliminary Assessment Resources

Table 4.175-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.175-3
AOC UST 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Environmental Baseline Survey	1996	LBNSY-ED	General information regarding the condition of USTs 128.1 and 128.2 and Pump Vault 128.3.
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Final Remediation Closure Report for the Building 128 Underground Storage Tank Sites	1998	OHM	Describes the site and closure activities related to the Building 128 UST site.
Final Closure Report	1999	CDM Federal	Groundwater sampling results indicate that no water quality objectives were exceeded and site closure is recommended.
Approval Letter	1999	RWQCB	19 February 1999 letter approving site closure.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
RWQCB = Regional Water Quality Control Board
UST = Underground Storage Tank

4.175.4 PA Recommendations

Based upon the PA findings, no further action is recommended for AOC UST 1 because of the following reasons:

- After the removal of USTs 128.1 and 128.2 and Pump Vault 128.3, as well as excavation of 335 cubic yards of contaminated soil, the site received regulatory approval for no further action for soils; and
- The results from the 1998 groundwater investigation indicate that no contaminants were detected above water quality objectives for the contaminants of concern. Site closure was approved for no further action by the LA RWQCB in a letter dated 19 February 1999.

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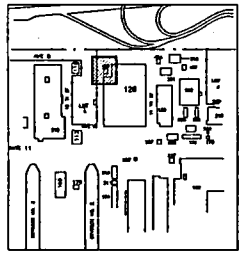
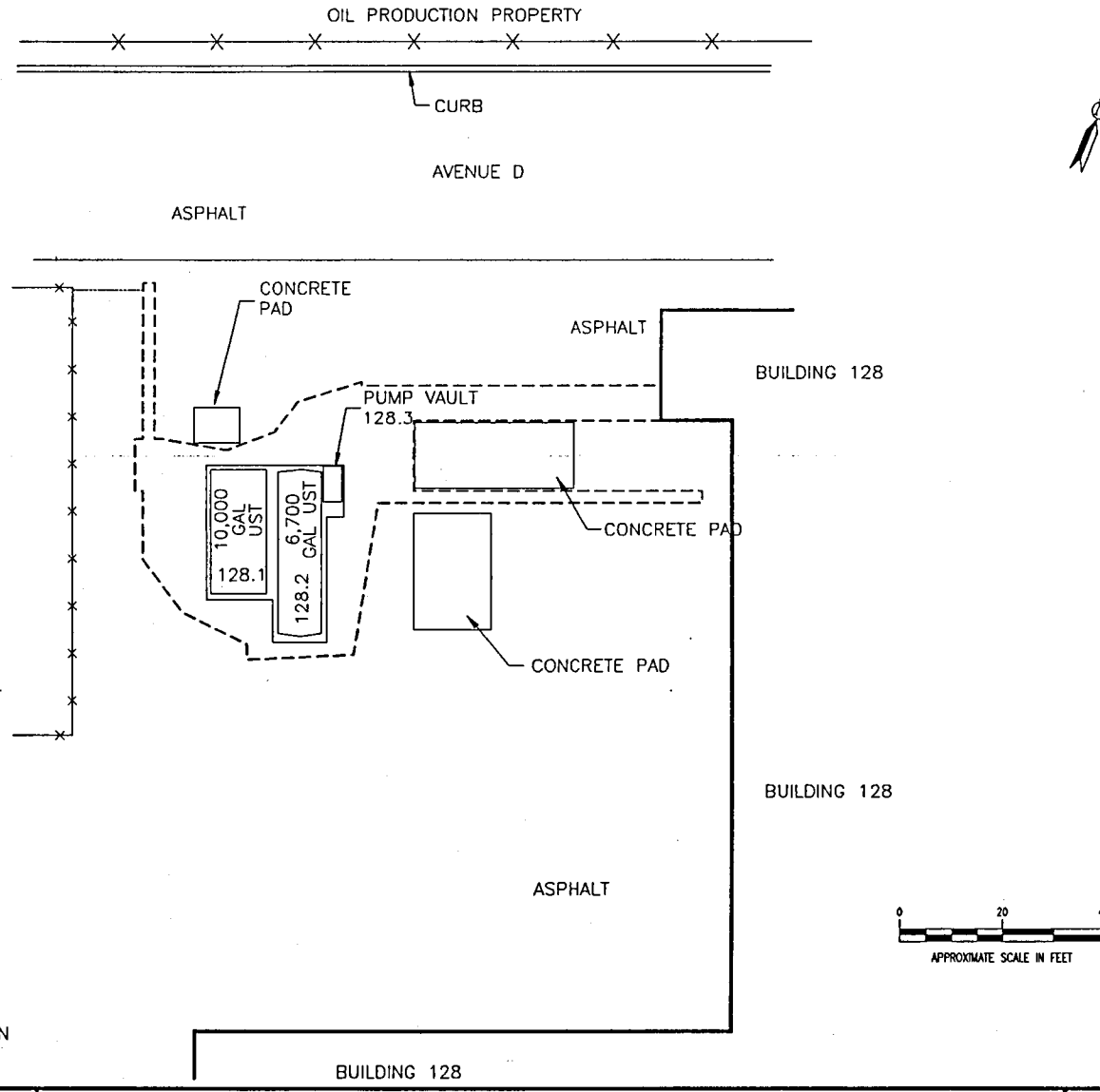


AREA LOCATION MAP



LEGEND

AOC = AREA OF CONCERN
UST = UNDERGROUND STORAGE TANK
GAL = GALLON
-x-x- = CHAIN LINK FENCE
= AREA OF 1996 UST AND SOIL EXCAVATION

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 1 FUEL OIL TANKS 128.1, 128.2, AND PUMP VAULT 128.3 GROUP B AREAS OF CONCERN	FIGURE 4.175-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.175-1	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

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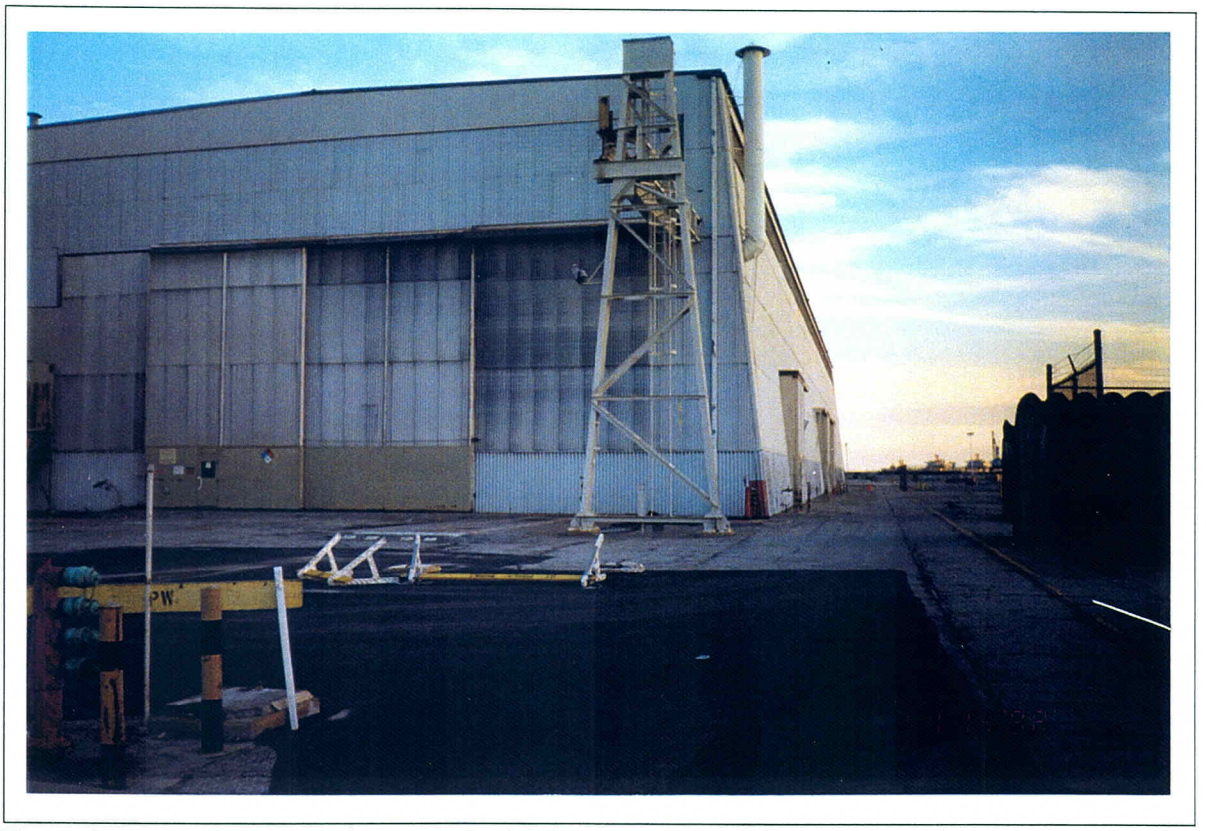


Figure 4.175-2 Location of Former Fuel USTs 128.1 and 128.2 and Pump Vault 128.3 (AOC UST 1), Facing Southeast 4/28/98

4.176 PAINT WASH TANK 216.1 (AOC UST 2)

This section presents a description of Paint Wash Tank 216.1 (AOC UST 2), its operational history and waste characteristics, PA resources used, and recommendations. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

4.176.1 Site Description

Table 4.176-1 summarizes the location and characteristics of AOC UST 2. A site map is provided as Figure 4.176-1. Site photographs are shown in Figures 4.176-2 and 4.176-3.

Table 4.176-1
AOC UST 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 2	Inside Building 216	C-31	Sandblasting and rinsing of metal plates used for building ship structures.	One concrete foundation below grade, with a pit covering half the floor and drain in the southeastern corner of the pit.	Tank: 1,000-gallon capacity. Concrete Foundation: 30 feet wide by 60 feet long by 8 feet deep.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Paint Wash Tank 216.1 was located inside Building 216 (see Figure 4.176-1). The tank was a concrete pit cast-in-place with a drain in the southeastern corner of the tank. The tank, which has no top, was built in 1980 and has a capacity of 1,000 gallons (LBNSY-ED 1996a).

During the March 1998 site reconnaissance, the tank was in place but was no longer being used. A metal frame that held a canopy was still at Building 216, although the canopy was gone (see Figures 4.176-2 and 4.176-3). A small amount of water existed in the sump; because there was no cover, it may have been rainwater.

The floor surface of Building 216 was constructed of one layer of 3.5-inch thick concrete (approximately 8 feet bgs), a 5-ply membrane (unidentified substance), packed fill material, and another layer of 3.5-inch concrete (LBNSY-PW 1975).

4.176.2 Operational History and Waste Characteristics

Table 4.176-2 summarizes the operational history and waste characteristics.

Table 4.176-2
AOC UST 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 2	1975 to 1993	Building 216 sandblasting and rinsing steel plates.	Rinse water potentially containing sandblast grit contaminated with heavy metals and paint.	450 to 500 gallons of solid waste annually.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Sandblasting activities were conducted at AOC UST 2 (Building 216) beginning in the mid-1970s. These activities consisted primarily of preparing steel plates for painting by a surface-polishing unit that used aluminum and steel grit, as well as glass beads. Wastes including blasting abrasive fines, paint, and rust were generated at Building 216. The general housekeeping at the tank was rated as poor (LBNSY-ED 1996a). Approximately 450 to 500 gallons of solid waste were generated annually; these wastes were disposed as nonhazardous waste (NEESA 1983). Rinsewater flowed from the sump inside Building 216 south to the storm drain system.

Sampling was conducted in 1993 adjacent to the southwestern corner of the tank and approximately 8 feet south of the tank as part of the UST program to remove and close USTs at LBNSY. One soil sample was collected at a depth of 4 feet and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX); VOCs; SVOCs; and metals. No analytes were detected, except for toluene and lead that were detected at low concentrations (Foster Wheeler 1993). The tank was closed in place in 1993 based on the results of the sampling.

Groundwater sampling was conducted in the area surrounding Building 216 in 1997 as part of the RI and SGI for Sites 9, 12, and 13. Groundwater flow direction in this area of LBNSY is generally to the north to northeast. Three groundwater samples located on the southwestern, northwestern, and eastern sides of the building were analyzed for VOCs and the results are shown in Figure 4.176-4. TCE concentrations ranged from 0.024 to 0.120 mg/L while PCE results ranged from non detect on the eastern side to 0.033 mg/L on the southwestern side of Building 216. The results for 1,2-DCE ranged from 0.011 to 0.100 mg/L. Vinyl chloride was not detected in any of the three samples (BNI 1999). The results of the groundwater investigation indicate that a VOC plume exists underneath Building 216 possibly as a result of a TCE spill in 1974 or 1975 at the northeastern corner of Building 129 (BNI 1999). The PA for the Building 216 paint wash tank did not identify the use of any chlorinated solvents at Building 216.

As part of UST compliance activities, UST 216.1 was removed in 1999. Soil and groundwater samples were collected as part of the removal process and a removal report with

recommendations was issued to the regulatory agencies. This removal report is currently under regulatory review.

4.176.3 Preliminary Assessment Resources

Table 4.176-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.176-3
AOC UST 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 11,996	1975	NAVFAC	Building 216 structural design.
Drawing No. 11,997	1975	NAVFAC	Building 216 structural design.
Drawing No. 11,999	1975	NAVFAC	Building 216 structural design.
Initial Assessment Study	1983	NEESA	Information regarding a TCE spill near Building 216 in 1974 or 1975.
UST informational notes	Various	Duane Rollefson	Underground Storage Tank Inventory.
Removal and Closure of Underground Storage Tanks	1993	Foster Wheeler Environmental Services	Sampling results at locations surrounding Building 216.
Environmental Baseline Survey	1996	LBNSY-ED	General information regarding the condition of UST 216.1. Clarifier, Sump, and Separator database listing UST 216.1.
Final Remedial Investigation (RI) Report, Installation Restoration Program for Sites 8 through 13	1997	Bechtel National, Inc.	Sampling results in the area north of Building 129.
Supplemental Groundwater Investigation, Installation Restoration Program Sites 9, 12, and 13	1999	Bechtel National, Inc.	Sampling results at locations surrounding Building 216.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
MISC = Miscellaneous
NAVFAC = Naval Facilities Engineering Command
NEESA = Naval Energy and Environmental Support Activity
No. = Number
TCE = Trichloroethene
UST = Underground Storage Tank

4.176.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC UST 2 because of sandblasting activities performed and the identified groundwater contamination beneath Building 216. In Work Plan Addendum Number 2, one soil and one groundwater sample were recommended for collection near Building 216 on the northern side of the tank (CDM Federal 1999). The samples were planned for analysis for metals (from sandblasting and sandblasted paint), SVOCs (from sandblasted paint), and VOCs (because of the VOCs detected in groundwater in this area during previous investigations). The sampling location shown in Figure 4.176-3 was selected because the groundwater at this location is hydraulically downgradient of the low point in the tank. In addition, this location was in an area that had not been previously sampled under the RI for Site 9 (groundwater to the west, south, and east had previously been collected and analyzed).

4.176.5 Number of Samples and Analyses

As described in Work Plan Addendum Number 2 (CDM Federal 1999), one soil and one groundwater sample were collected. Samples were collected on 25 February 1999 and analyzed for the analytical categories indicated in Table 4.69-4. The soil sample was collected at a depth of 7.5 feet bgs and the groundwater sample was collected at 10.8 feet bgs.

Sampling locations and sampling results are shown in Figure 4.176-4.

Table 4.176-4
AOC UST 2 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals
Soil	1	1	1
Groundwater	1	1	1[(a)]

Notes:
(a) Dissolved metals.
SVOCs = Semivolatile Organic Compounds VOCs = Volatile Organic Compounds
UST = Underground Storage Tank

4.176.6 Analytical Results

Analytical results for the AOC UST 2 soil and groundwater samples are presented in Tables 4.176-5 and 4.176-6. Sampling results are summarized in Figure 4.176-4.

4.176.6.1 Soil

No VOCs or SVOCs were detected in the soil sample collected at AOC UST 2. Ten of the seventeen metals analyzed for were detected.

4.176.6.2 Groundwater

No VOCs or SVOCs were detected in the groundwater sample collected at AOC UST 2. Seven of the seventeen metals analyzed for were detected.

No VOCs were detected in the groundwater sample collected for this AOC, although VOCs were identified in most groundwater samples collected during previous studies within 200 feet of this location (BNI 1999).

4.176.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.176.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, the groundwater carbon tetrachloride result (originally reported as non-detect) was unusable, but no other data were rejected. Data qualifiers were applied to the sample as described in Appendix O.

It is not clear why results from sample 99SY-US2a-W-9.6 did not confirm groundwater contamination in this area. It is possible that the sampling depth may have been a factor because the highest concentrations detected in previous investigations were in wells screened to 20 feet bgs, while the groundwater sample collected at this location was collected at 9.6 feet bgs.

4.176.9 Recommendations

No further action is recommended for the Paint Wash Tank (AOC UST 2) as part of the AOCs Investigation because samples were collected and no analytes exceeded their respective screening criteria. Tank 216.1 was removed in 1999 under the Compliance Program and the closure report is currently being reviewed by the regulatory agencies.

Table 4.176-5
AOC UST 2 Sampling Results Summary for Organic Compounds
February 1999

	SOIL					GROUNDWATER				
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG [a] (mg/kg)	No. of Detections above Criteria	No. of Samples	No. of Detections	Concentration (mg/L)	Screening Criteria for Water [b] (mg/L)	No. of Detections above Criteria
VOCs (60 analytes)	1	0	ND	NA	0	1	0	ND	NA	0
SVOCs (64 analytes)	1	0	ND	NA	0	1	0	ND	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.

AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.176-6
AOC UST 2 Sampling Results Summary for Metals
February 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	1	0	ND	750	11.3	0
Arsenic	1	1	4.1	3.0	17.5	0
Barium	1	1	65.4	100,000	275	0
Beryllium	1	0	ND	3,400	1.4	0
Cadmium	1	0	ND	930	1.7	0
Chromium	1	1	13.0	450	60.9	0
Cobalt	1	1	7.8	29,000	24.5	0
Copper	1	1	9.7	70,000	798.7	0
Lead	1	1	3.0	1,000	185.2	0
Mercury	1	1	0.046	560	2.5	0
Molybdenum	1	0	ND	9,400	NA	0
Nickel	1	1	10.2	37,000	32.6	0
Selenium	1	0	ND	9,400	1.4	0
Silver	1	0	ND	9,400	1.5	0
Thallium	1	0	ND	150	4.2	0
Vanadium	1	1	27.2	13,000	84.9	0
Zinc	1	1	33.6	100,000	844.9	0

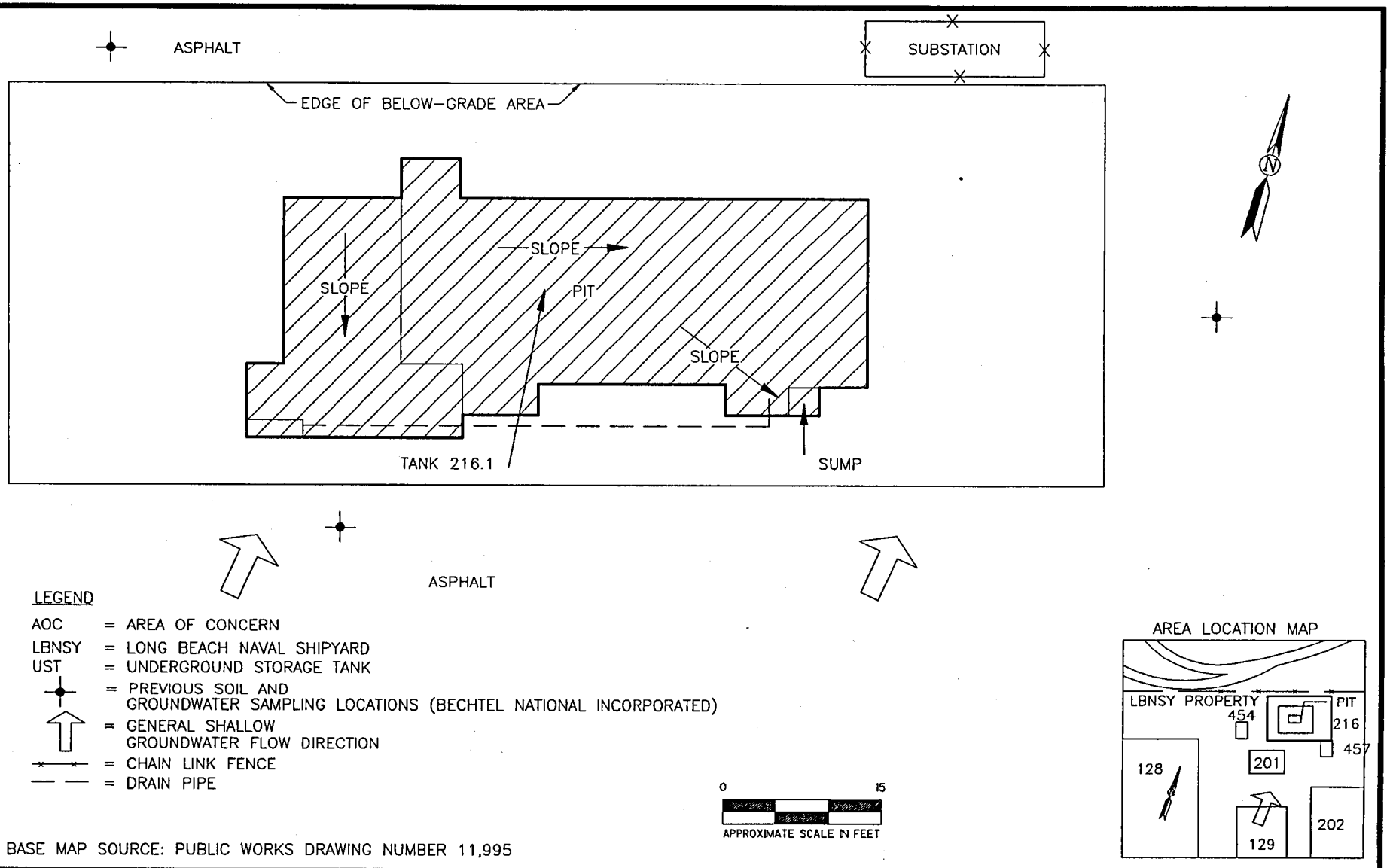
Table 4.176-6 (continued)
AOC UST 2 Sampling Results Summary for Metals
February 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	1	0	ND	1.2	0.0616	0
Arsenic	1	1	0.0031	0.008	0.0276	0
Barium	1	1	0.263	1[d]	0.1777	0
Beryllium	1	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	1	0	ND	0.001	0.0017	0
Chromium	1	1	0.0056	190	0.0029	0
Cobalt	1	0	ND	2.2[d]	0.0071	0
Copper	1	0	ND	0.003	0.1072	0
Lead	1	0	ND	0.002	0.028	0
Mercury	1	1	0.0012	$4.0x10^{-5}$	0.0009	0
Molybdenum	1	1	0.0155	0.18[d]	NA	0
Nickel	1	1	0.0021	0.005	0.0958	0
Selenium	1	0	ND	0.015	0.040	0
Silver	1	0	ND	0.0007	0.0072	0
Thallium	1	0	ND	0.014	0.0075	0
Vanadium	1	0	ND	0.26[d]	0.0107	0
Zinc	1	1	0.0035	0.020	0.291	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



4.176-6

LEGEND

AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
UST = UNDERGROUND STORAGE TANK
= PREVIOUS SOIL AND GROUNDWATER SAMPLING LOCATIONS (BECHTEL NATIONAL INCORPORATED)
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= CHAIN LINK FENCE
= DRAIN PIPE

0 15
APPROXIMATE SCALE IN FEET

AREA LOCATION MAP

BASE MAP SOURCE: PUBLIC WORKS DRAWING NUMBER 11,995

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 2 PAINT WASH TANK 216.1	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.176-1	GROUP B AREAS OF CONCERN	4.176-1
MODIFIED BY: J. Brown PROJECT NO: 6210-014		

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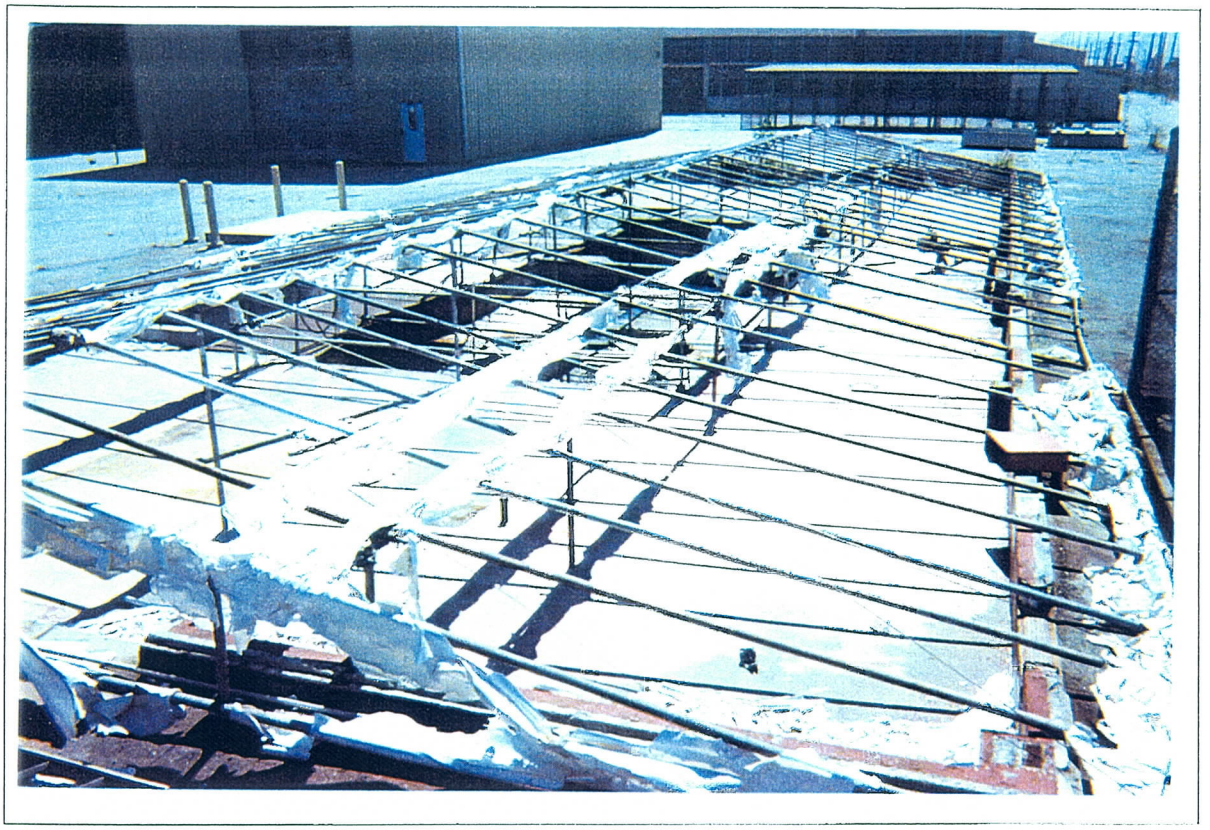
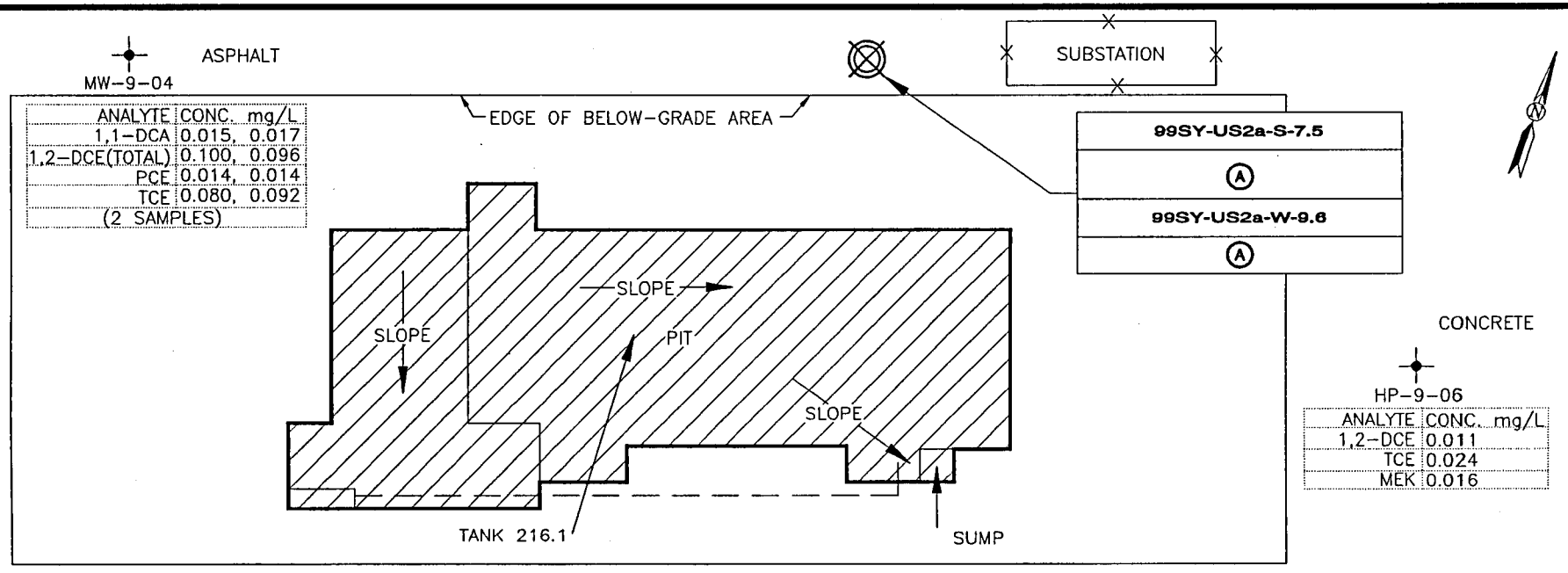


Figure 4.176-2 Paint Wash Tank 216.1 (AOC UST 2) 8/3/98
Facing Southwest

Figure 4.176-3 Paint Wash Tank 216.1 (AOC UST 2) 9/23/98
Facing North



99SY-US2a-S-7.5=SAMPLE NAME (TYPICAL)
WHERE S =SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 7.5 = DEPTH BELOW GROUND SURFACE (FEET)

LEGEND

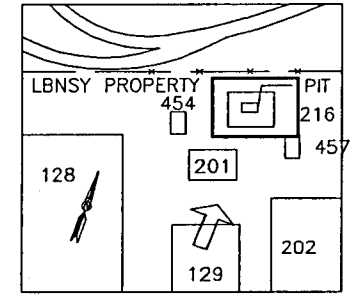
AOC = AREA OF CONCERN
CONC. = CONCENTRATION
LBNSY = LONG BEACH NAVAL SHIPYARD
UST = UNDERGROUND STORAGE TANK
= PREVIOUS SOIL AND GROUNDWATER SAMPLING LOCATIONS (BECHTEL NATIONAL INCORPORATED)
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= CHAIN LINK FENCE
= DRAIN PIPE
= SOIL AND GROUNDWATER SAMPLING LOCATION

BNI = BECHTEL NATIONAL INC.
DCA = DICHLOROETHANE
DCE = DICHLOROETHENE
PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHYLENE
mg/L = MILLIGRAMS PER LITER
MEK = METHYL ETHYL KETONE
J = ESTIMATED

(A) = NO ORGANIC COMPOUNDS DETECTED AND NO METALS ABOVE SCREENING CRITERIA

0 15
APPROXIMATE SCALE IN FEET

AREA LOCATION MAP



BASE MAP SOURCE: PUBLIC WORKS DRAWING NUMBER 11,995

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATION AND RESULTS SUMMARY, FEBRUARY 1999 AOC UST 2 PAINT WASH TANK 216.1 GROUP B AREAS OF CONCERN	FIGURE 4.176-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.176-4		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.176-12

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4.177 DIESEL FUEL TANKS 129.1 and 129.2 (AOC UST 3)

A description of the Diesel Fuel Tanks 129.1 and 129.2 (AOC UST 3), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.177.1 to 4.177.4.

4.177.1 Site Description

Table 4.177-1 summarizes the location and characteristics of AOC UST 3. A site map is provided as Figure 4.177-1. A site photograph is shown in Figure 4.177-2.

Table 4.177-1
AOC UST 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 3	Outside northeastern corner of Building 129.	D-31	Two USTs used to store diesel fuel for the testing of diesel engines.	Two steel USTs removed in 1996.	2,300 gallons each measuring approximately 6 feet in diameter and 12 feet in length.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Diesel Fuel Tanks 129.1 and 129.2 were constructed outside Building 129 in 1986 in association with the testing of diesel engines in the northeastern corner of Building 129. The tanks were constructed of steel and had a capacity of 2,300 gallons. Each tank was 6 feet in diameter and 12 feet in length. During the March 1998 site reconnaissance, the Diesel Fuel Tanks were no longer in place. Asphalt patches were observed at the former AOC UST 3 locations.

4.177.2 Operational History and Waste Characteristics

Table 4.177-2 summarizes the operational history and waste characteristics.

Table 4.177-2
AOC UST 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 3	1986 to 1996	Containment of diesel fuel used for diesel test cell operations.	Potential diesel fuel leaks from USTs.	Unknown.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

The tanks were used in conjunction with the Building 129 diesel test cells from 1986 until 1996. The two tanks were removed along with 530 feet of associated piping in late 1996. A total of 286 cubic yards of soil was removed from the area surrounding the two former tanks

and was analyzed to assess whether soil had been impacted by any potential leaks. In addition, soil and groundwater samples were collected from the site where the tanks were removed as part of the closure process. The soil and groundwater samples were analyzed for TPH-diesel, TPH-motor oil, BTEX, and MTBE. The results from the in-place soil, excavated soil, and groundwater samples were all below the established screening thresholds established for the closure of the site (Geofon 1998). The RWQCB submitted a concurrence letter for closure of the site for USTs 129.1 and 129.2 on 22 May 1998 and the City of Long Beach Health Department submitted a letter for closure of the site on 29 May 1998 (see Appendix F).

4.177.3 Preliminary Assessment Resources

Table 4.177-3 summarizes the resources used and interviews conducted in the PA evaluation.

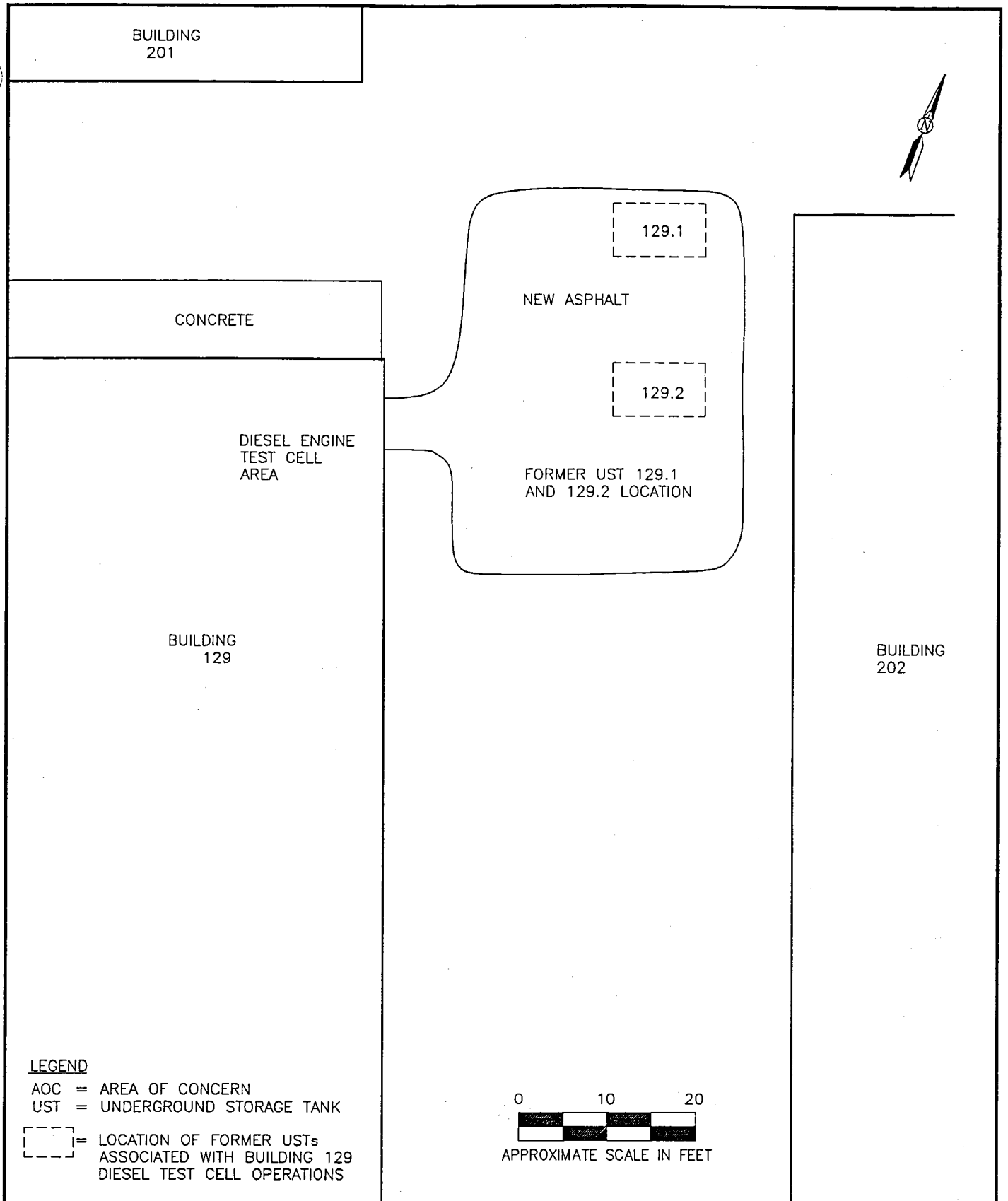
Table 4.177-3
AOC UST 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Building 129 UST Closure Report for USTs 129.1 and 129.2 Long Beach Naval Shipyard	1998	Geofon, Inc.	Information on the removal of USTs 129.1 and 129.2 and closure of the site.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
UST = Underground Storage Tank

4.177.4 PA Recommendations

Based upon PA findings, no further action is recommended for AOC UST 3 because closure has been completed and regulatory approval for closure has been received by the RWQCB and the City of Long Beach Health Department.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 3 DIESEL FUEL TANKS 129.1, 129.2 GROUP B AREAS OF CONCERN	FIGURE 4.177-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.177-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.177-2 Former Location of USTs 129.1 and 129.2, Building 129 (AOC UST 3) 9/23/98 Facing Northeast

4.178 PAINT WASH TANKS 202.1, 202.2, AND 202.3 (AOC UST 4)

This section presents a description of Paint Wash Tanks 202.1, 202.2, and 202.3 (AOC UST 4), their operational history and waste characteristics, PA resources used, and recommendations. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

Buildings 203 and 204 were not originally included by the EBS as part of AOC UST 4, but potential areas of contamination were identified between Buildings 203 and 204 by regulatory agencies during a site walk on 15 April 1998.

4.178.1 Site Description

Table 4.178-1 summarizes the location and characteristics of AOC UST 4. A site map is provided as Figure 4.178-1. Site photographs are shown in Figures 4.178-2 to 4.178-6. Figures 4.178-7 and 4.178-8 show diagrams of the paint booth scrubber systems.

Table 4.178-1
AOC UST 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 4	Building 202	D-31, E-31, D-32, E-32	Tanks used to contain liquids from painting overspray.	Three open-top concrete tanks covered with metal floor grating in Building 202.	40 feet wide, by 60 feet long by 8 feet deep and 33,000-gallon capacity each.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Paint Wash Tanks 202.1, 202.2, and 202.3 are located inside Building 202 and were used to contain paint overspray. The tanks were built in 1978, are constructed of concrete, and each had a capacity of 33,000 gallons (LBNSY-ED 1996a). It is unknown whether the tanks were constructed with any non-permeable liners; Figure 4.178-8 indicates that a Kraft Paper Covering was used.

During the March 1998 site reconnaissance, these tanks were observed to be in place but no longer used. Each tank can be accessed through a small door on the north end or a large door on the south end. Rail lines lead into each tank area on each end. Each tank was covered with a metal grate.

During a site walk with regulatory agencies on 15 April 1998, three potential areas of contamination were observed: (1) a small amount of sediment that may have been sandblast grit was observed in a storm drain catch basin just south of Buildings 203 and 204, (2) a small

hydraulic fluid oily stain was observed on the pavement adjacent to Building 204 on the western side, and (3) an area of raised asphalt was observed between Buildings 203 and 204 beneath dust collectors.

4.178.2 Operational History and Waste Characteristics

Table 4.178-2 summarizes the operational history and waste characteristics.

Table 4.178-2
AOC UST 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 4	1978 to 1996	Spray painting large equipment or materials; potential spills or leaks from tanks.	Paint waste, alkaline solutions, stripping solutions containing paint, varnish remover, and sodium hydroxide.	Unknown.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Sandblasting was performed in Buildings 203 and 204. Building 202 also conducted shop (small-scale) abrasive blasting using aluminum and steel grit (NEESA 1983), although sandblasting mostly occurred in Buildings 203 and 204. Sandblasted equipment or materials were then moved via rail lines into Building 202 paint booth rooms for painting. Equipment or materials were then dried in drying rooms north of the painting rooms (Figure 4.178-1).

Paint overspray was contained in tanks 202.1, 202,2, and 202.3. A positive downdraft airflow was used to direct oversprayed paint into the USTs, which contained water. Paint particles that entered the water coalesced because a coagulant had been added to the water (Brown and Caldwell 1980). The air was forced up through scrubbers that contained a water curtain/cascade to ensure removal of paint, then through exhaust fans located on the roof (see Figures 4.178-7 and 4.178-8).

The types of materials and waste produced during painting included paint waste, alkaline solutions, stripping solutions containing paint, varnish remover, and sodium hydroxide. The UST log for LBNSY (LBNSY-ED 1996c) indicates that the tanks were cleaned out by LBNSY personnel and designated as inactive when operations ceased at LBNSY in 1996.

The tanks were classified as air pollution abatement system sumps in the LBNSY UST Inventory Log (LBNSY-ED 1996c).

4.178.3 Preliminary Assessment Resources

Table 4.178-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.178-3
AOC UST 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Drawing No. 16,496	Unknown	LBNSY-ED	Building 202 structural information.
Toxic and Hazardous Waste Procedures Survey	1980	Brown and Caldwell	Spray paint booth air scrubber operations.
Initial Assessment Study	1983	Navy Energy and Environmental Support Activity	Information on types of waste generated at Building 202.
Environmental Baseline Survey	1996	LBNSY-ED	General information regarding the condition of tanks 202.1, 202.2, and 202.3.
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Personnel Interviews	1998	Johnson, Nunn, LBNSY	Process and building information.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
MISC = Miscellaneous
UST = Underground Storage Tank

4.178.4 PA Recommendations

Based upon PA findings, further action was recommended for AOC UST 4 to identify any potential contamination from painting activities at the Building 202 tanks and sandblasting operations at Buildings 203 and 204. Samples were planned for collection adjacent to the tanks and analysis was planned for VOCs and metals, as described in Work Plan Addendum Number 2 (CDM Federal 1999).

4.178.5 Number of Samples and Analyses

Work Plan Addendum Number 2 (CDM Federal 1999) identified seven soil, six groundwater, and one sediment sample to be collected. One groundwater sample could not be collected: adjacent to Building 204 at sampling location US4f, refusal was encountered at a depth of 8 feet bgs (i.e., the direct push rig could not proceed because it hit an obstruction). The regulatory agencies had specifically requested that a soil sample be collected at this location, but a groundwater sample was not required. Therefore, the seven soil samples, five groundwater samples, and one sediment sample that were collected for AOC UST 4 met the minimum requirements.

Samples were collected at AOC UST 4 on 25 February 1999, as well as 5 and 10 March 1999. Samples were analyzed for the analytical categories indicated in Table 4.178-4. Soil samples were collected from one to nine feet below ground surface and the groundwater samples were

collected at the depth that groundwater was first encountered, typically about 10 feet bgs. Figure 4.178-9 indicates the sample locations. No sampling was performed directly beneath the tanks by drilling through their concrete bottom because the Port of Long Beach believes that the painting facility and these tanks might be reused in the future, so they requested non-destructive sampling.

Table 4.178-4
AOC UST 4 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals
Soil	7	7	7
Groundwater	5	5	5[(a)]
Sediment	1	1	1

Notes:
(a) Dissolved metals.

AOC = Area of Concern
UST = Underground Storage Tank
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds

4.178.6 Analytical Results

Analytical results for the soil, groundwater, and sediment samples are summarized in Tables 4.178-5 and 4.178-6, as well as in Figure 4.178-10.

4.178.6.1 Soil

There were no VOCs or SVOCs detected in the soil samples at AOC UST 4. Fourteen of 17 metals were detected in the soil samples.

4.178.6.2 Groundwater

Two VOCs were detected in the groundwater samples: cis-1,2-dichloroethene and toluene. Cis-1,2-dichloroethene was detected in samples 99SY-US4c-W-10.2 and 99SY-US4e-W-12 at concentrations of 0.0005J mg/L and 0.001J mg/L, respectively. Toluene was detected in sample 99SY-US4d-W-8 at a concentration of 0.001J mg/L.

Two SVOCs were detected in the groundwater samples: BEHP and butyl benzyl phthalate (BBP). BEHP was detected in samples 99SY-US4d-W-8 and 99SY-US4e-W-12 at concentrations of 0.006J and 0.003J, respectively. BBP was detected in sample 99SY-US4e-W-12 at a concentration of 0.003J.

Nine of 17 metals were detected in the groundwater samples.

4.178.6.3 Sediment

There were no VOCs detected in the sediment sample collected at AOC UST 4. Two SVOCs, BEHP and di-n-octyl phthalate (DOP), were detected in sediment sample 99SY-US4h-S-3 at concentrations of 1.2J mg/kg and 0.26J mg/kg, respectively. Fourteen of 17 metals were detected in the sediment sample.

4.178.7 Data Comparison to Screening Criteria

BEHP was detected in groundwater sample 99SY-US4d-W-8 slightly above screening criteria for groundwater (0.006 mg/L compared to Ocean Plan criteria of 0.0035 mg/L). BEHP was not a suspected analyte of concern from the paint wash tank activities. It is possible that the BEHP detections are a result of laboratory contamination, as discussed in Appendix O. No other analytes exceeded screening criteria for the soil, groundwater, or sediment samples.

4.178.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

BEHP was not a suspected site contaminant and is a common laboratory contaminant, so it is suspected that the reported BEHP result may be a result of laboratory cross-contamination as discussed in Appendix O. The Nine Group B AOCs Report, dated 24 November 1998, recommended no further action at two AOCs where BEHP was reported at concentrations of 0.005 and 0.009 mg/L in groundwater samples (above the Ocean Plan criterion of 0.0035 mg/L). Regulatory agency approval for no further action was received for these two AOCs (CDM Federal 1998d).

One groundwater sample could not be collected, but no significant data gap resulted for the following reason. During a 15 April 1998 site walk, the regulatory agencies requested that a soil sample be collected at that location, with the provision that a groundwater sample should be collected only if the soil sample indicated significant contamination. Because the soil sample was collected at one foot bgs (i.e., one foot below the oil-stained pavement) and no analytes exceeded screening criteria, analysis of a groundwater sample at this location was not required.

4.178.9 Recommendations

No further action is recommended for the Paint Wash Tanks at Building 202 (AOC UST 4). BEHP was detected above screening criteria, but was most likely a result of laboratory

contamination as discussed in Appendix O. No other analytes exceeded screening criteria for the soil, groundwater, and sediment samples collected.

The Port of Long Beach requests that these tanks be left in place for possible reuse.

Table 4.178-5
AOC UST 4 Sampling Results Summary for Organic Compounds
February-March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Cis-1,2-Dichloroethene	7	0	ND	150	0	5	2	0.0005J, 0.001J	0.006[d]	0
Toluene	7	0	ND	520	0	5	1	0.001J	85	0
SVOCs (64 analytes)[c]										
Bis(2-ethylhexyl)phthalate (BEHP)	7	0	ND	210	0	5	2	**0.006J**, 0.003J	0.0035	1
Butyl Benzyl Phthalate (BBP)	7	0	ND	930	0	5	1	0.003J	7.3[d]	0

	SEDIMENT				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)	1	0	ND	NA	0
SVOCs (64 analytes)[c]					
Bis(2-ethylhexyl)phthalate (BEHP)	1	1	1.2J	210	0
Di-n-octyl phthalate (DOP)	1	1	0.26J	10,000	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) No Ocean Plan criteria exist. Values presented for cis-1,2-dichloroethene and butyl benzyl phthalate are tap water PRGs; these values are for informational purposes only.

Bold results indicate that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
N/A = Not Applicable
ND = Not Detected
No. = Number
PRGs = Preliminary Remediation Goals
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
UST = Underground Storage Tank
VOCs = Volatile Organic Compounds

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Table 4.178-6
AOC UST 4 Sampling Results Summary for Metals
February-March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	7	2	0.70J, 2.0	750	11.3	0
Arsenic	7	7	3.4J, 3.1, 3.4, 6.0J, 3.6J, 6.4J, 7.7J	3.0	17.5	0
Barium	7	7	55.1, 62.1, 123J, 92.7J, 92.5J, 141J, 150	100,000	275	0
Beryllium	7	0	ND	3,400	1.4	0
Cadmium	7	2	0.086J, 0.32J	930	1.7	0
Chromium	7	7	13.7, 12.9, 23.8J, 17.5, 21.8, 51.7, 31.8	450	60.9	0
Cobalt	7	7	6.9, 7.4, 11.5J, 9.5, 11.2, 14.9, 15.1	29,000	24.5	0
Copper	7	7	7.0, 7.8, 16.6J, 20.0, 22.6, 50.0, 35.5	70,000	798.7	0
Lead	7	7	3.4, 3.0, 4.6J, 7.0J, 7.1J, 12.8J, 8.1	1000	185.2	0
Mercury	7	3	0.032, 0.031, 0.12	560	2.5	0
Molybdenum	7	1	0.75	9,400	NA	0
Nickel	7	7	9.6, 9.8, 17.0J, 14.1J, 20.4J, 33.1J, 29.9	37,000	32.6	0
Selenium	7	1	0.23	9,400	1.4	0
Silver	7	0	ND	9,400	1.5	0
Thallium	7	0	ND	150	4.2	0
Vanadium	7	7	21.6, 22.1, 39.7J, 32.1, 37.9, 49.8, 46.4	13,000	84.9	0
Zinc	7	7	34.5, 38.4, 56.5J, 46.7, 49.6, 146, 77.0J	100,000	844.9	0
GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	5	0	ND	1.2	0.0616	0
Arsenic	5	2	0.0058, 0.0092	0.008	0.0276	0
Barium	5	5	0.206, 0.119, 0.113J, 0.269J, 0.136J	1[d]	0.1777	0
Beryllium	5	0	ND	3.3×10^{-5}	0.002	0
Cadmium	5	0	ND	0.001	0.0017	0
Chromium	5	2	0.063, 0.062	190	0.0029	0
Cobalt	5	0	ND	2.2[d]	0.0071	0
Copper	5	0	ND	0.003	0.1072	0
Lead	5	0	ND	0.002	0.028	0
Mercury	5	1	0.00014	4.0×10^{-5}	0.0009	0
Molybdenum	5	2	0.0157, 0.0148	0.18[d]	NA	0
Nickel	5	2	0.0037, 0.0031	0.005	0.0958	0
Selenium	5	2	0.0064, 0.0087	0.015	0.040	0
Silver	5	1	0.00086	0.0007	0.0072	0
Thallium	5	0	ND	0.014	0.0075	0
Vanadium	5	0	ND	0.26[d]	0.0107	0
Zinc	5	2	0.0098, 0.0084	0.020	0.291	0

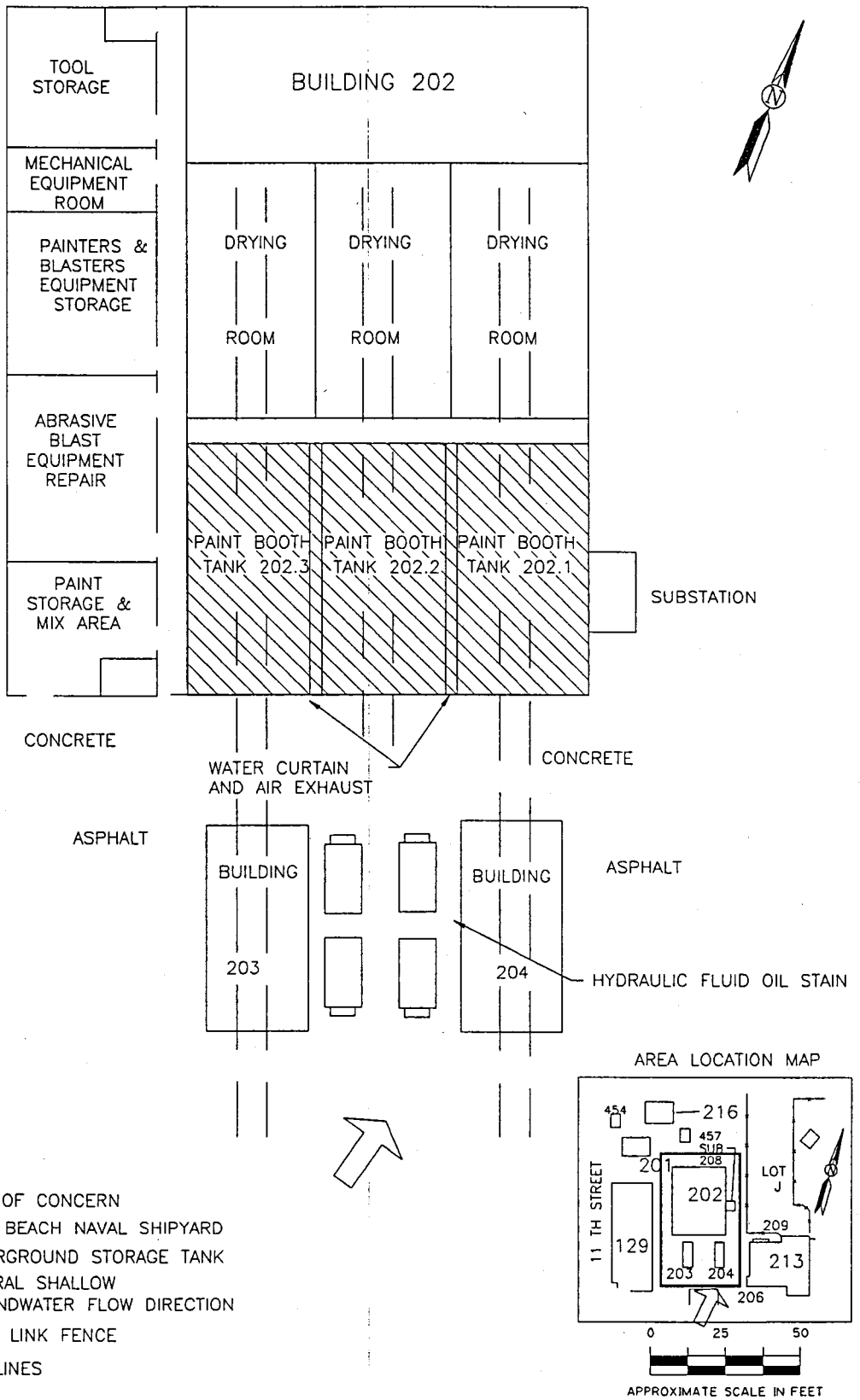
Table 4.178-6 (continued)
AOC UST 4 Sampling Results Summary for Metals
February-March 1999

SEDIMENT						
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Industrial PRG and Background
Antimony	1	1	7.5	750	11.3	0
Arsenic	1	1	7.4	3.0	17.5	0
Barium	1	1	202	100,000	275	0
Beryllium	1	0	ND	3,400	1.4	0
Cadmium	1	1	7.8J	930	1.7	0
Chromium	1	1	216	450	60.9	0
Cobalt	1	1	11.2	29,000	24.5	0
Copper	1	1	1780	70,000	798.7	0
Lead	1	1	253J	1000	185.2	0
Mercury	1	1	0.24	560	2.5	0
Molybdenum	1	1	36.2	9,400	NA	0
Nickel	1	1	259	37,000	32.6	0
Selenium	1	1	0.88J	9,400	1.4	0
Silver	1	0	ND	9,400	1.5	0
Thallium	1	0	ND	150	4.2	0
Vanadium	1	1	18.6	13,000	84.9	0
Zinc	1	1	4640	100,000	844.9	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency
UST = Underground Storage Tank



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 4 PAINT WASH TANKS 202.1, 202.2, AND 202.3	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.178-1	GROUP B AREAS OF CONCERN	4.178-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

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4.178-1

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Figure 4.178-2 Paint Wash Tanks 202.1, 202.2, and 202.3, located inside Building 202 (AOC UST 4) Facing Northwest 8/3/98

Figure 4.178-3 Paint Booth with Tank Located Beneath Grated Floor (AOC UST 4), Building 202, Facing South 12/14/98

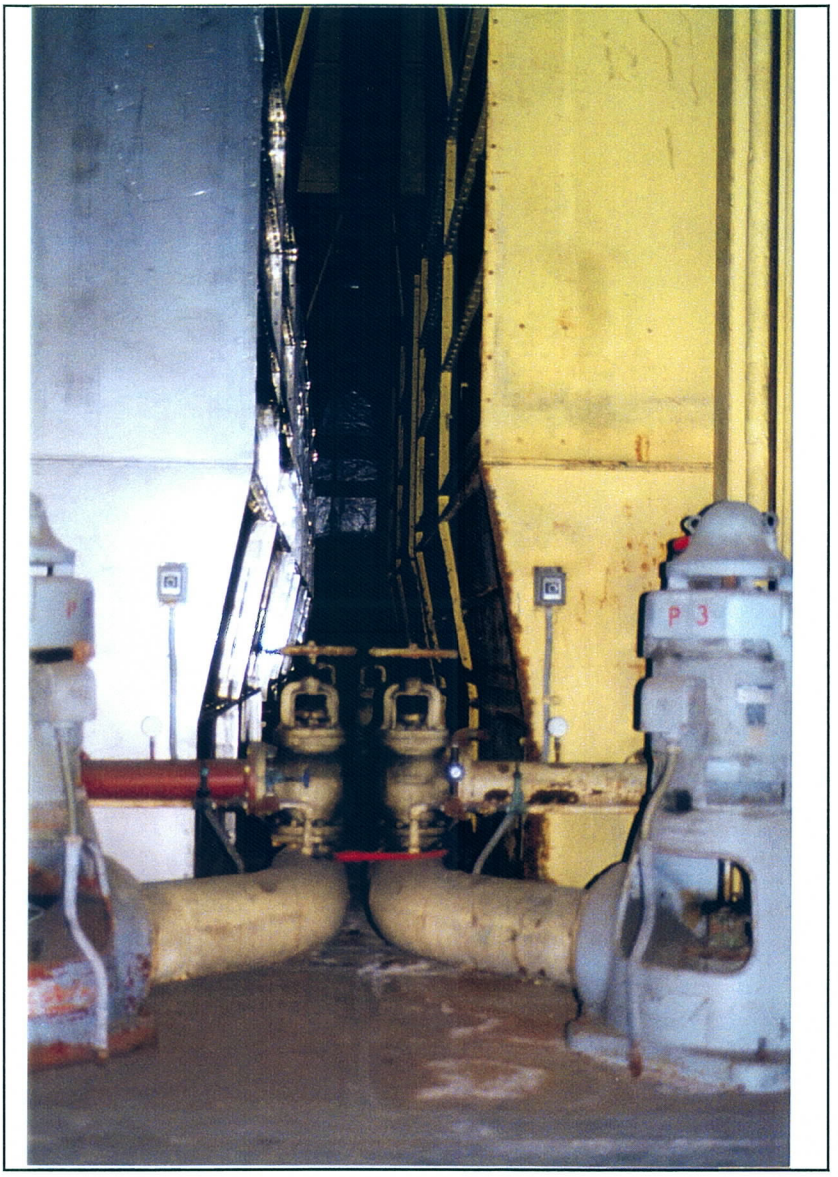


Figure 4.178-4 Scrubber System Outside Paint Booths (AOC UST 4), Building 202, Facing South 12/14/98

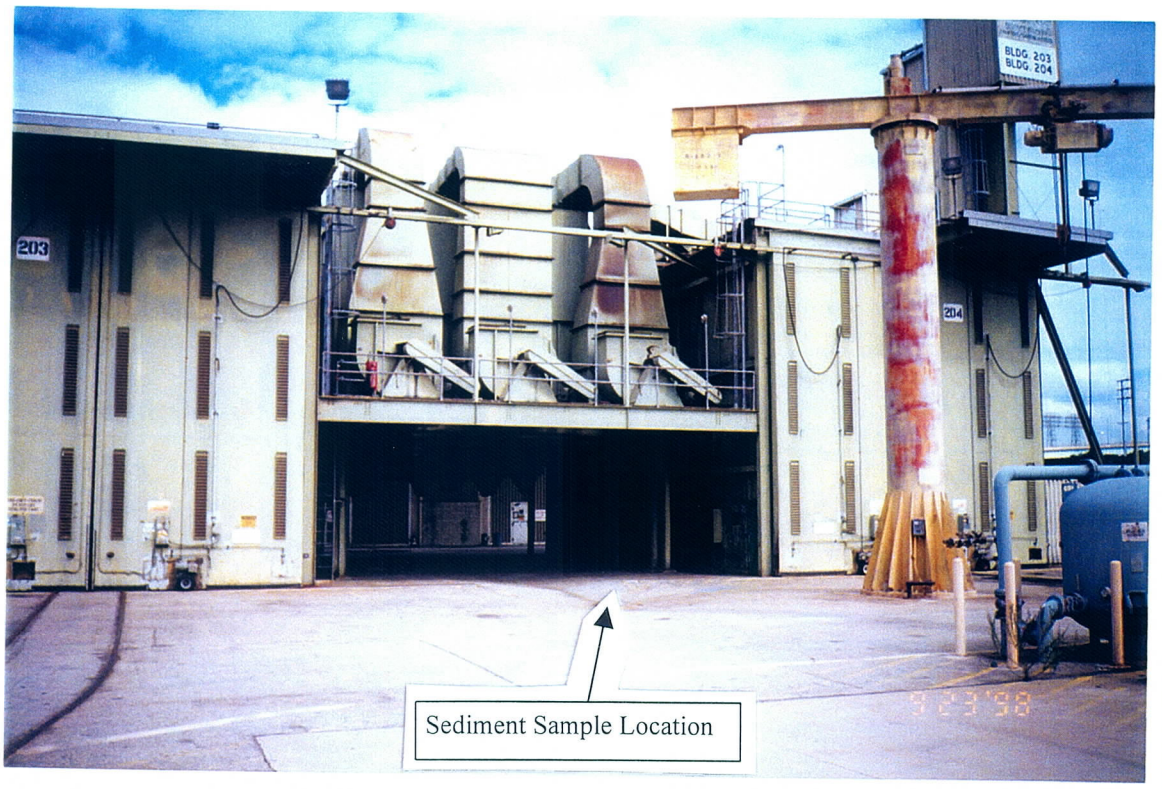
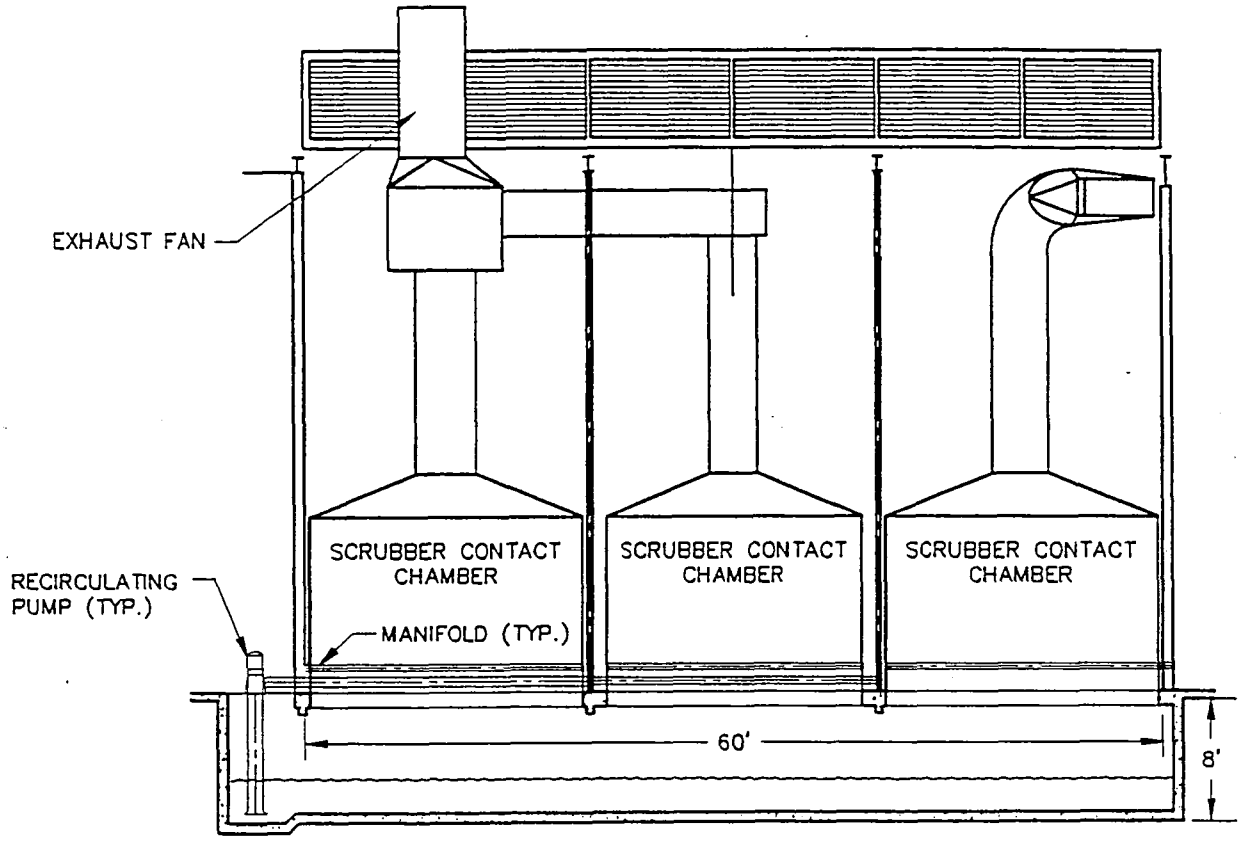


Figure 4.178-5 Building 203 and 204, South of Building 202 (AOC UST 4) 9/23/98
Facing North

Figure 4.178-6 Oil Stain Near Building 204 (AOC UST 4) 12/14/98
Facing Northeast



PAINT BOOTH SCRUBBER SYSTEM

ELEVATION

SOURCE: Figure 1, Brown and Caldwell Unknown Report 1992.

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC UST 4 PAINT BOOTH SCRUBBER SYSTEM, SIDE VIEW	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 12/98 FN: 4.178-7		4.178-7
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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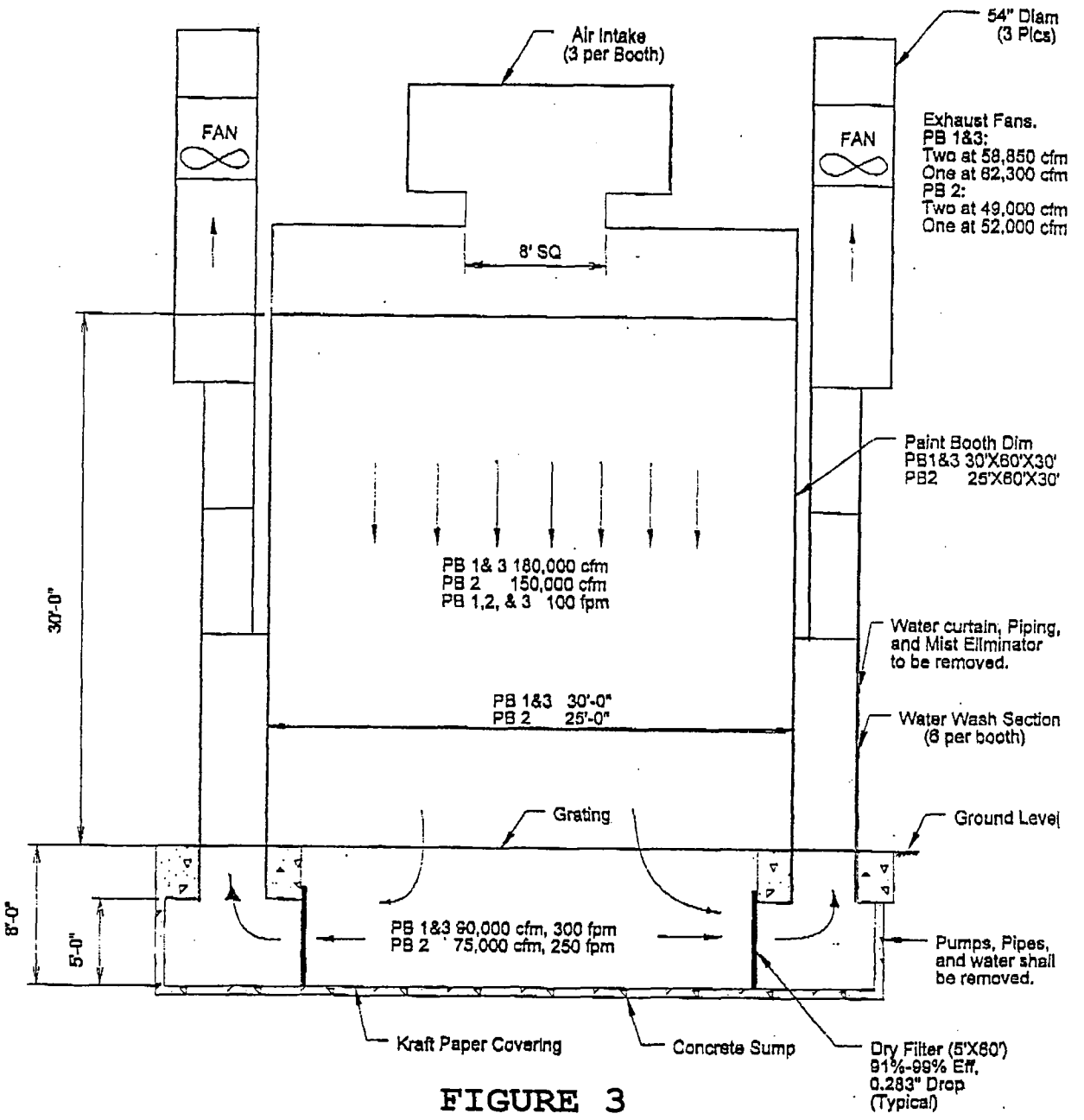

FIGURE 3

Typical Paint Booth Conversion

Section View Looking South

SOURCE: Long Beach Naval Shipyard–Environmental division Paint Booth Conversion Plan of Action, 1995

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC UST 4 PAINT BOOTH SCRUBBER SYSTEM, SIDE VIEW GROUP B AREAS OF CONCERN	FIGURE 4.178-8
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 12/98 FN: 4.178-8		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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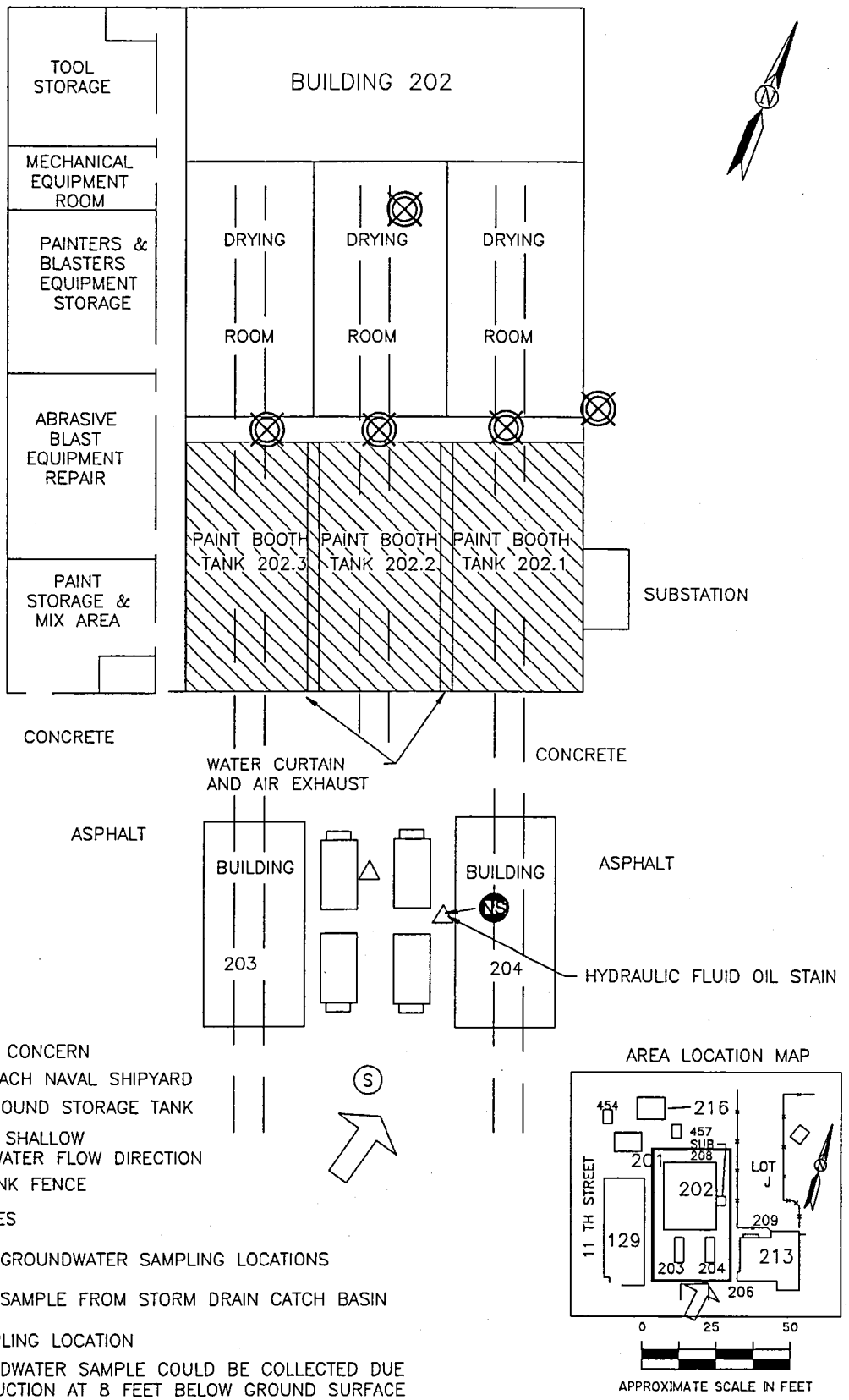

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC UST 4 PAINT WASH TANKS 202.1, 202.2, AND 202.3 GROUP B AREAS OF CONCERN	FIGURE 4.178-9
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.178-9 MODIFIED BY: J. Brown PROJECT NO. 6210-014-157		

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99SY-US4e-S-9 = SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 9 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER

(A) = NO ORGANIC COMPOUNDS DETECTED AND NO METALS ABOVE SCREENING CRITERIA

(NS) = NO GROUNDWATER SAMPLE COULD BE COLLECTED DUE TO OBSTRUCTION AT 8 FEET BELOW GROUND SURFACE

99SY-US4a-S-8
(A)
99SY-US4a-W-11.3
(A)

99SY-US4c-S-9
99SY-US4c-W-10.2

ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.0005J

99SY-US4b-S-6
(A)
99SY-US4b-W-8.1
NO DETECTIONS

99SY-US4d-S-9
(A)
99SY-US4d-W-8

ANALYTE	CONC. (mg/L)
TOLUENE	0.001J
BEHP	0.006J

99SY-US4e-S-9
(A)
99SY-US4e-W-12

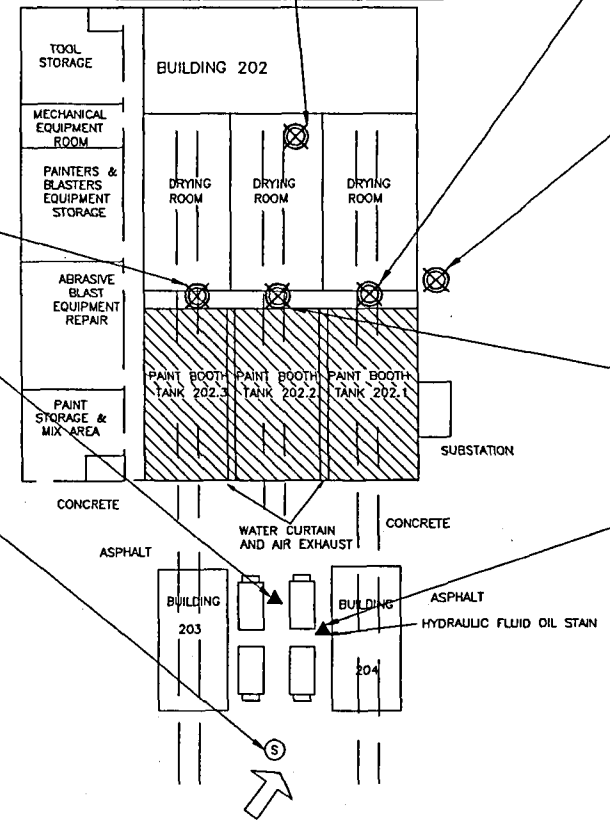
ANALYTE	CONC. (mg/L)
CIS-1,2-DICHLOROETHENE	0.001J
BEHP	0.003J
BUTYL BENZYL PHTHALATE	0.003J

99SY-US4g-S-1
(A)

99SY-US4h-S-3

ANALYTE	CONC. (mg/kg)
BEHP	1.2J
DI-N-OCTYL PHTHALATE	0.26J

99SY-US4f-S-1
(A)
99SY-US4f-W-
(NS)

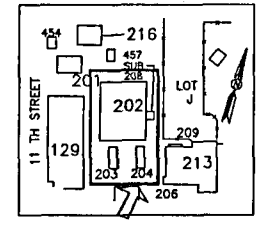


LEGEND
AOC = AREA OF CONCERN
LBNSY = LONG BEACH NAVAL SHIPYARD
UST = UNDERGROUND STORAGE TANK
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION
BEHP = BIS(2-ETHYLHEXYL)PHTHALATE
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
= CHAIN LINK FENCE
= SOIL AND GROUNDWATER SAMPLING LOCATIONS
(S) = SEDIMENT SAMPLE FROM STORM DRAIN CATCH BASIN
= SOIL SAMPLING LOCATION
= RAIL LINES
= SAMPLE WHICH EXCEEDED SCREENING CRITERIA.

NOTE: THIS FIGURE SHOWS ORGANIC DETECTIONS. NO METALS WERE DETECTED ABOVE SCREEING CRITERIA. OCEAN PLAN CRITERIA FOR BIS(2-ETHYLHEXYL)PHTHALATE = 0.0035 mg/L.

0 25 50
APPROXIMATE SCALE IN FEET

AREA LOCATION MAP



LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.178-10
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, FEBRUARY-MARCH 1999
AOC UST 4
PAINT WASH TANKS 202.1, 202.2, AND 202.3

GROUP B AREAS OF CONCERN

FIGURE
4.178-10

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.178-20

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4.179 DIESEL FUEL TANKS 302.1, 302.2, AND 302.3 (AOC UST 7)

A description of the Diesel Fuel Tanks 302.1, 302.2, and 302.3 (AOC UST 7), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.179.1 to 4.179.4.

4.179.1 Site Description

Table 4.179-1 summarizes the location and characteristics of AOC UST 7. A site map is provided as Figure 4.179-1. A site photograph is shown in Figure 4.179-2.

Table 4.179-1
AOC UST 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 7	South of Building 302	E-38	Diesel tanks used in association with the Boiler Plant.	Three steel USTs.	25,000 gallons each, approximately 10 feet in diameter and 45 feet in length.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Diesel Fuel Tanks 302.1, 302.2, and 302.3 were constructed in 1973 for underground storage of diesel fuel in association with the Boiler Plant at Building 302. The tanks were constructed of steel and each had a capacity of 25,000 gallons. The tanks were each approximately 10 feet in diameter and 45 feet in length. Each of the tanks were anchored to a concrete slab (Geofon 1998).

During the September 1998 site reconnaissance, relatively new asphalt covered the area where the USTs formerly existed south of Building 302.

4.179.2 Operational History and Waste Characteristics

Table 4.179-2 summarizes the operational history and waste characteristics.

Table 4.179-2
AOC UST 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 7	1973 to 1997	Storing diesel fuel for operations at Building 302.	Potential diesel fuel leaks from USTs.	Unknown

AOC = Area of Concern No. = Number UST = Underground Storage Tank

The tanks were operated for approximately 24 years and were removed in August 1997. A total of 221 cubic yards of soil were also removed from the area surrounding the former USTs.

Samples of the remaining liquid within the tank were collected to identify potential contaminants in the soil from any leaks in the tanks. Total Recoverable Petroleum Hydrocarbons (TRPH) in the liquid in UST 302.2 was measured at 1,000,000 mg/L (i.e., 100 percent).

Soil samples were collected from the excavated soil and excavation pit and analyzed for TPH as diesel and for TRPH. Soil sample results were below the Los Angeles RWQCB screening criteria (Geofon 1998). The RWQCB submitted a closure letter for USTs 302.1, 302.2, 302.3 on 20 July 1998 and the City of Long Beach Health Department submitted a letter in September 1998 approving closure of the site (see Appendix F).

During excavation activities, asbestos-containing UST restraints were identified and asbestos abatement was conducted to address these materials.

4.179.3 Preliminary Assessment Resources

Table 4.179-3 summarizes the resources used and interviews conducted in the PA evaluation.

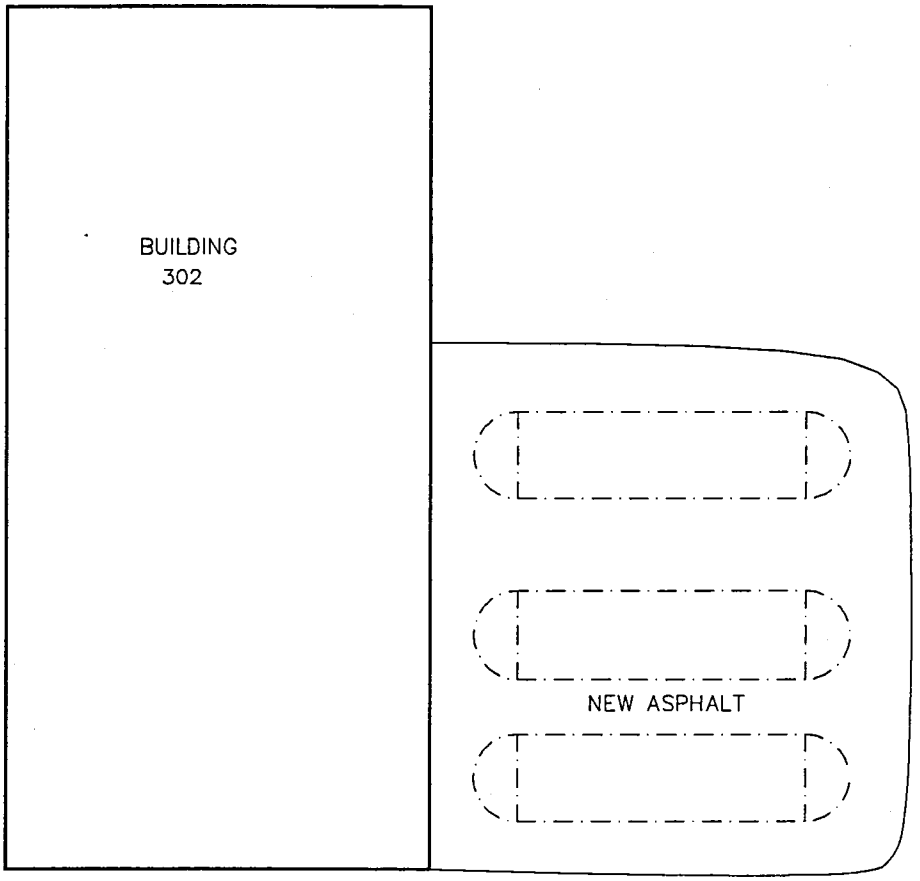
Table 4.179-3
AOC UST 7 Preliminary Assessment Resources Summary

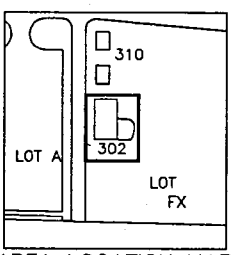
Resource	Date	Source	Summary
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Personnel Interview	1998	Rollefson, LBNSY	General UST information.
Underground Storage Tank and Oil Water Separator Removal Report at Various Sites Long Beach Naval Complex	1998	Geofon, Inc.	Information on the tank removal and closure of USTs 302.1, 302.2, and 302.3.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
UST = Underground Storage Tank

4.179.4 PA Recommendations

Based on PA findings, no further action is recommended for AOC UST 7 because closure procedures have been completed, none of the soil sample results were above the RWQCB screening criteria, and the RWQCB and City of Long Beach Health Department have approved the site for closure.





AREA LOCATION MAP

LEGEND

AOC = AREA OF CONCERN
UST = UNDERGROUND STORAGE TANK

= FORMER LOCATION OF UST

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 7 DIESEL FUEL TANKS 301.1, 302.2, 302.3 GROUP B AREAS OF CONCERN	FIGURE 4.179-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.179-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.179-2 Location of former USTs 302.1, 302.2, and 302.3, South of Building 302 (AOC UST 7), Facing Northeast 9/23/98

4.180 DIESEL FUEL TANK 207.1 (AOC UST 10)

A description of Diesel Fuel Tank 207.1 (AOC UST 10), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.180.1 to 4.180.4.

4.180.1 Site Description

Table 4.180-1 summarizes the location and characteristics of AOC UST 10. A site map is provided as Figure 4.180-1. A site photograph is shown in Figure 4.180-2.

Table 4.180-1
AOC UST 10 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 10	Southeast of Building 207.	F-30	UST used to store diesel fuel at the sewage pump station.	One steel UST and associated piping.	300 gallons. Approximately 4 feet in diameter and 4 feet in length

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Diesel Fuel Tank 207.1 was constructed in 1986 for underground storage of diesel fuel in association with the sewage pump station at Building 207. The tank was constructed of steel and had a capacity of 300 gallons. The tank was 4 feet in diameter and 4 feet in length (Geofon 1998).

During the September 1998 site reconnaissance, new asphalt covered the area where the UST formerly existed.

4.180.2 Operational History and Waste Characteristics

Table 4.180-2 summarizes the operational history and waste characteristics.

Table 4.180-2
AOC UST 10 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 10	1986 to 1997	Storing diesel fuel for operating pumps at the Building 207 sewage pump station.	Potential diesel fuel leaks from the UST.	Unknown.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

The tank was operated for approximately 11 years and was removed in August 1997, along with 16 feet of associated piping. A total of 12 cubic yards of soil were removed from around

the former UST. Samples of the remaining liquid within the tank were collected to identify potential contaminants in the soil from any leaks that may have occurred from the tank. TRPH was measured at 992,000 mg/L (i.e., 99.2%) from the liquid in UST 207.1 (Geofon 1998).

Soil samples were collected from the excavated soil and excavation pit and analyzed for TPH as diesel, TRPH, and BTEX. The soil sample results were all below the RWQCB screening criteria (Geofon 1998). The RWQCB submitted a closure letter for UST 207.1 on 20 July 1998 and the City of Long Beach Health Department submitted a letter in September 1998 approving closure of this site (see Appendix F).

4.180.3 Preliminary Assessment Resources

Table 4.180-3 summarizes the resources used and interviews conducted in the PA evaluation.

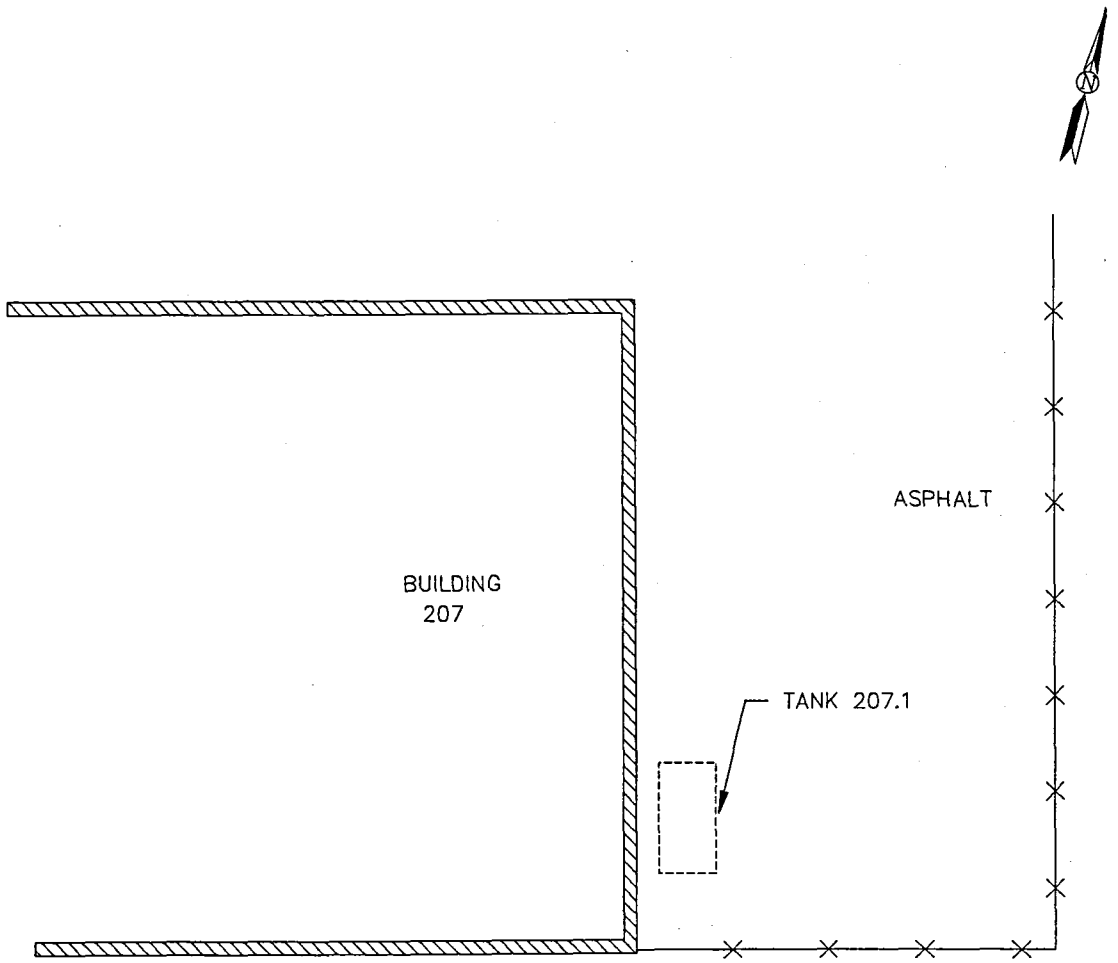
Table 4.180-3
AOC UST 10 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Underground Storage Tank and Oil Water Separator Removal Report at Various Sites Long Beach Naval Complex	1998	Geofon, Inc.	Information on the tank removal and closure of UST 207.1.

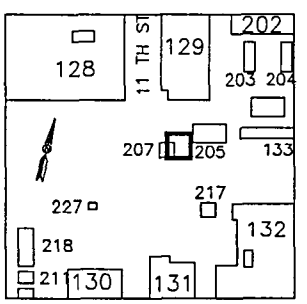
AOC = Are of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
UST = Underground Storage Tank

4.180.4 PA Recommendations

Based upon PA findings, no further action is recommended for AOC UST 10 because closure procedures have been completed, none of the soil sample results were above the RWQCB screening criteria, and the RWQCB and City of Long Beach Health Department have approved the site for closure.



SULLIVAN STREET



AREA LOCATION MAP

LEGEND

AOC = AREA OF CONCERN
UST = UNDERGROUND STORAGE TANK
= CHAIN LINK FENCE
= BUILDING WALL
= FORMER UST LOCATION

0 5 10 15
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 10 DIESEL FUEL TANK 207.1	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.180-1	GROUP B AREAS OF CONCERN	4.180-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.180-2 Former Location of Diesel Fuel Tank 207.1, Southeast of Building 207 (AOC UST 10), Facing South 9/23/98

4.181 OILY SLOP TANK 132.1 (AOC UST 14)

UST 132.1 was identified as AOC UST 14, but may also have been connected to two OWS/clarifier units and a holding tank that are addressed as AOC IWS 5 in Section 4.50. Because they may have been connected, AOC IWS 5 (Section 4.50 of this report) addresses all four tanks in this area, including the oily slop/diversion tank, Tank 132.1. Tank 132.1 was removed in 1999 under the Compliance Program.

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4.182 WASTE SLUDGE TANK 301.1 (AOC UST 19)

A description of the Waste Sludge Tank 301.1 (AOC UST 19), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.182.1 to 4.182.4.

4.182.1 Site Description

Table 4.182-1 summarizes the location and characteristics of AOC UST 19. A site map is provided as Figure 4.182-1. A site photograph is shown in Figure 4.182-2.

Table 4.182-1
AOC UST 19 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
UST 19	East of Building 301	P-37, P-38	Tank used to hold waste sludge from Building 301 operations.	One steel UST.	1,000 gallons. Approximately 4.5 feet in diameter by 6 feet in length.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

Waste Sludge Tank 301.1 was constructed in 1952 for underground storage of waste sludge containing battery acid in association with the Service Group Building located at Building 301 on Pier E. The UST was approximately 4.5 feet in diameter and 6 feet in length, had a capacity of 1,000 gallons, and was constructed of steel. There was approximately 62 feet of associated piping with the UST at Building 301 (Geofon 1998).

4.182.2 Operational History and Waste Characteristics

Table 4.182-2 summarizes the operational history and waste characteristics.

Table 4.182-2
AOC UST 19 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
UST 19	1952 to Unknown (Removed in 1997)	Storage of waste sludge and acid from Building 301 Service Group operations.	Potential waste sludge and battery acid leaks from UST.	Unknown.

AOC = Area of Concern No. = Number UST = Underground Storage Tank

The tank was operated from 1952 until an undetermined time, possibly as late as operational closure of Building 301 in 1996. The UST and 62 feet of associated piping were removed in May 1997. A total of 40 cubic yards of soil was removed from the area around the former UST (Geofon 1998).

Soil samples were collected from the excavated soil, the excavation pit, and from the pipe trenching areas as part of the closure process. The soil samples from the UST site were analyzed for TPH as diesel and gasoline, TRPH, BTEX, VOCs, and metals. The soil sample results were all below the RWQCB screening criteria (Geofon 1998). The RWQCB submitted a closure letter for UST 301.1 on 20 July 1998 and the City of Long Beach Health Department submitted a letter in September 1998 approving closure of the site (see Appendix F).

4.182.3 Preliminary Assessment Resources

Table 4.182-3 summarizes the resources used and interviews conducted in the PA evaluation.

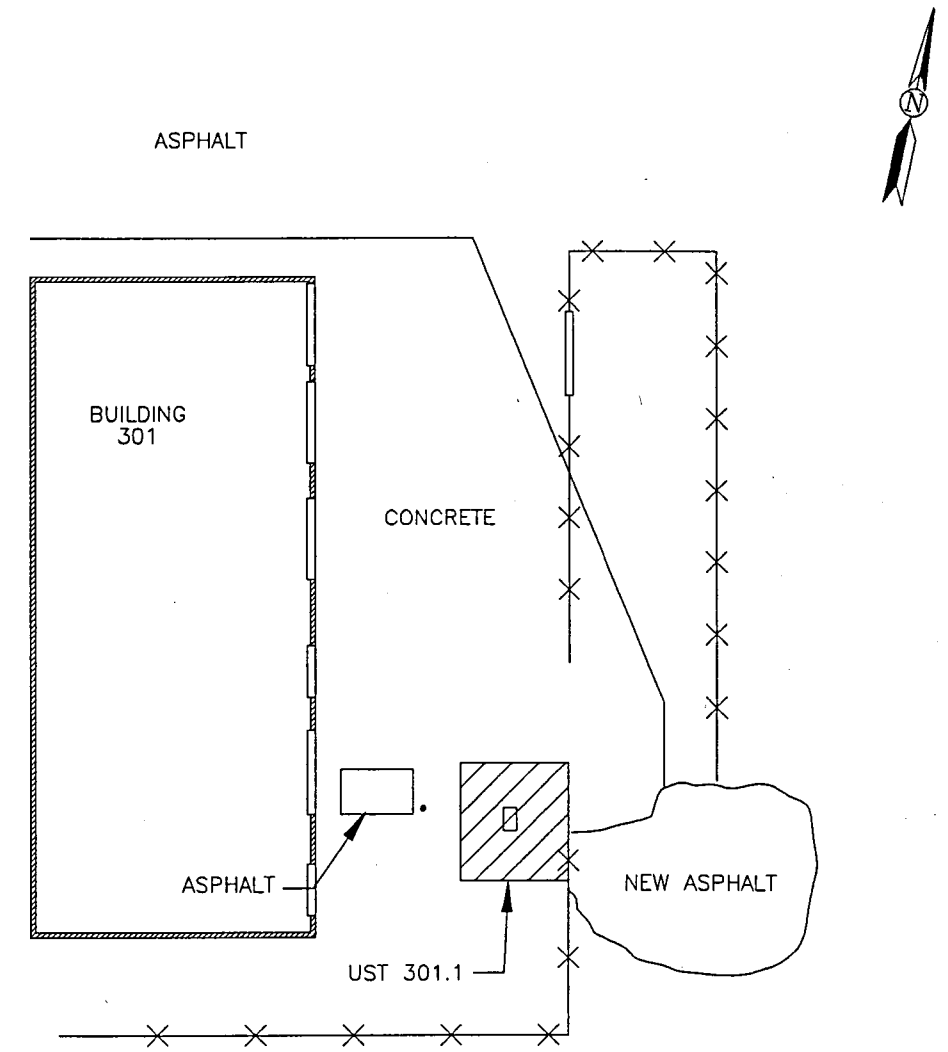
Table 4.182-3
AOC UST 19 Preliminary Assessment Resources Summary

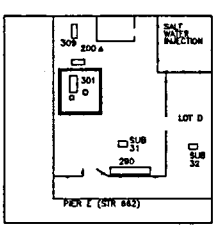
Resource	Date	Source	Summary
LBNSY Underground Storage Tank Inventory Log	1996	LBNSY-ED	General UST information.
Underground Storage Tank and Oil Water Separator Removal Report at Various Sites Long Beach Naval Complex	1998	Geofon, Inc.	Information on the tank removal and closure of UST 301.1.

AOC = Area of Concern
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
UST = Underground Storage Tank

4.182.4 PA Recommendations

Based upon PA findings, no further action is recommended for AOC UST 19 because closure procedures have been completed, none of the soil sample results were above the RWQCB screening criteria, and the RWQCB and City of Long Beach Health Department have approved the site for closure.





AREA LOCATION MAP

LEGEND

AOC = AREA OF CONCERN

UST = UNDERGROUND STORAGE TANK

= CHAIN LINK FENCE

= BUILDING WALL

0 10 20 30 40

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC UST 19 WASTE SLUDGE TANK 301.1	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.182-1	4.182-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.182-3

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Figure 4.182-2 Former Location of Waste Sludge Tank 301.1 (AOC UST 19) Facing Northwest 9/23/98

4.183 CAN CRUSHING UNIT (AOC ADD 1)

A description of the Can Crushing Unit (AOC ADD 1), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.183.1 to 4.183.4.

AOC ADD 1 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional (ADD) AOC added to Group B in late 1998 based upon site walk observations by regulatory agencies on 22 September 1998.

4.183.1 Site Description

Table 4.183-1 summarizes the location and characteristics of AOC ADD 1. A site map is provided as Figure 4.183-1. No site photograph could be taken because demolition of this portion of the Naval Station occurred in late 1998.

Table 4.183-1
AOC ADD 1 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 1	Northeastern corner of Building 102 (at Naval Station).	Located at Naval Station (not on Figure 1-3)	Non-portable can crushing machine used for empty containers. All containers had contained non-hazardous materials.	One non-portable can crushing machine mounted on a concrete pad.	Approximately 5 feet long by 3 feet wide by 3 feet in height.

ADD = Additional AOC = Area of Concern No. = Number

During the September 1998 site reconnaissance, the AOC ADD 1 location (outside Building 102 at the Naval Station) was inspected. The fixed treatment unit was no longer at the location. The concrete pad on which the can crusher was located, as well as the surrounding asphalt, appeared to be in good condition and was not stained.

4.183.2 Operational History and Waste Characteristics

Table 4.183-2 summarizes the operational history and waste characteristics.

Table 4.183-2
AOC ADD 1 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 1	1980s to 1990s	The unit was used for crushing rinsed, empty cans for recycling.	Non-hazardous recyclable metals.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

The unit was reportedly permitted as FTU 11 under a Tiered Permit (U.S. EPA Identification Number CA 6170023109). The unit was used for less than 10 years and only non-hazardous materials had previously been contained in the containers that were crushed. Empty containers no larger than 55 gallons in size were rinsed, then crushed.

On 3 April 1998, the Navy submitted a letter to the DTSC requesting closure of FTU 11 under the Tiered Permitting Program. DTSC forwarded the letter to the City of Long Beach as the CUPA, so the Navy is awaiting response from the CUPA. In late 1998, this part of the Naval Station was deconstructed.

4.183.3 Preliminary Assessment Resources

Table 4.183-3 summarizes the resources used and interviews conducted in the PA evaluation.

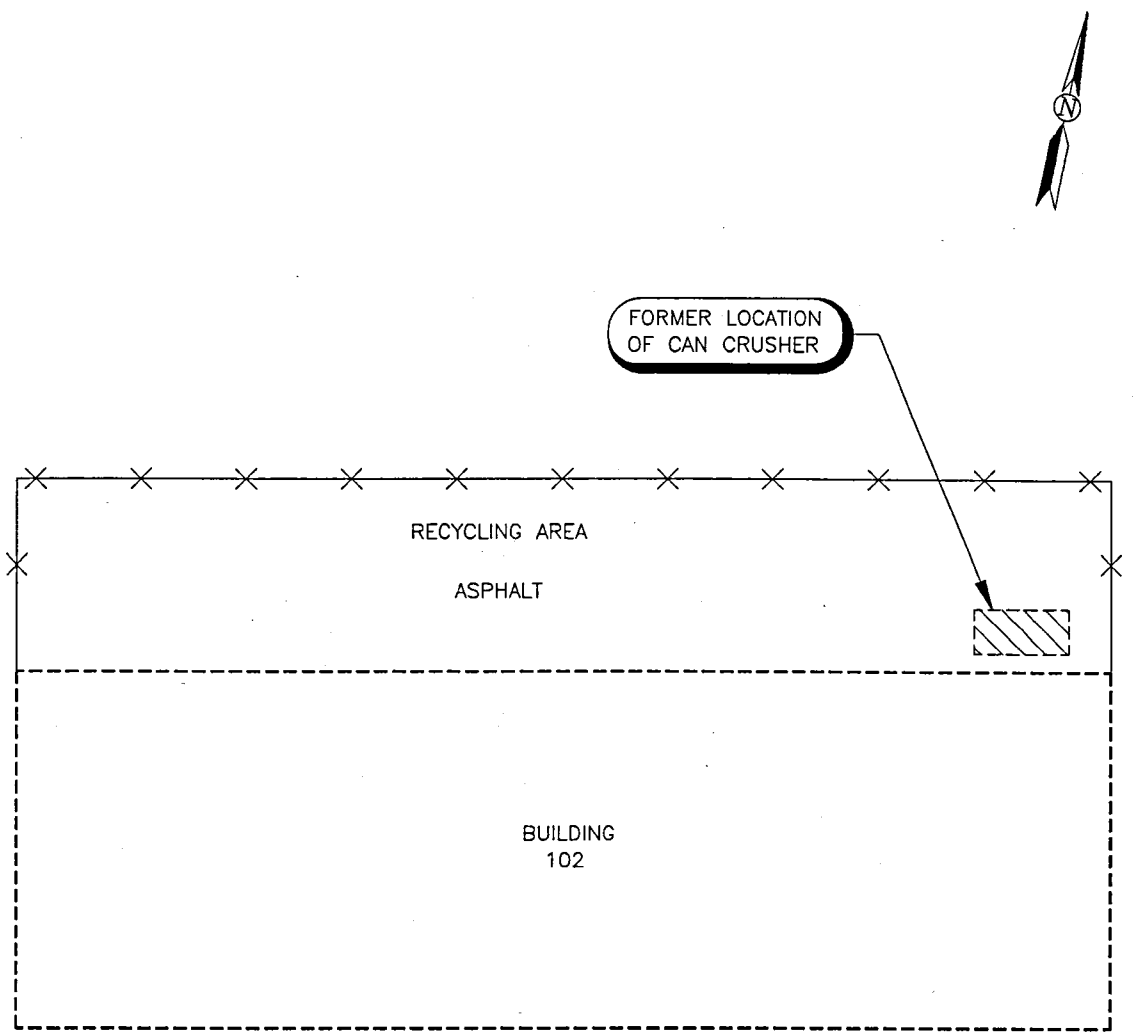
Table 4.183-3
AOC ADD 1 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Personnel Interview	1998	Johnson, LBNSY	Can crushing unit was used for non-hazardous containers. No potential impacts to soil or groundwater.

ADD = Additional AOC = Area of Concern LBNSY = Long Beach Naval Shipyard

4.183.4 PA Recommendations

No further action is recommended for AOC ADD 1 because the unit was only used for empty containers that previously contained non-hazardous materials. The asphalt area surrounding the AOC appeared to have no impacts from the past operations. The Navy requested in a 3 April 1998 letter that the CUPA approve closure under the Tiered Permitting Program and approval is pending from the CUPA.



LEGEND

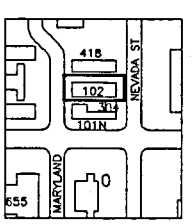
AOC = AREA OF CONCERN

ADD = ADDITIONAL AREAS OF CONCERN

[ ] = DEMOLISHED IN LATE 1998

—X—X— = CHAIN LINK FENCE

NOTE: FIGURE SHOWS FOOTPRINT OF FORMER BUILDING 102 AND FORMER LOCATION OF CAN CRUSHER LOCATED AT THE FORMER NAVAL STATION. THE BUILDING AND CAN CRUSHER WERE DEMOLISHED IN LATE 1998.



AREA LOCATION MAP

0 20 40 60

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 1 CAN CRUSHING UNIT	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.183-1		4.183-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.184 COOLANT RECOVERY TANKS, BUILDING 132 (AOC ADD 2)

A description of the Coolant Recovery Tanks at Building 132 (AOC ADD 2), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.184.1 to 4.184.4.

AOC ADD 2 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 22 September 1998.

4.184.1 Site Description

Table 4.184-1 summarizes the location and characteristics of AOC ADD 2. A site map is provided as Figure 4.184-1. Site photographs are shown in Figures 4.184-2 and 4.184-3.

Table 4.184-1
AOC ADD 2 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 2	South of Building 132	J-32	Tanks used to store coolant oils and lubricants planned for use in Building 132 machinery on the first and first intermediate floor.	Four polyethylene tanks, pipes, filter press, and pumps. Tanks are surrounded by an approximately 3-foot high concrete berm.	2 tanks approximately 12 feet high and 5 feet in diameter. 2 tanks approximately 8 feet high and 4 feet in diameter.

ADD = Additional AOC = Area of Concern No. = Number

Four coolant recovery tanks, associated PVC pipes, a filter press, and pumps (AOC ADD 2) located south of Building 132 in a three-sided corrugated metal building were inspected in September 1998. The tanks were not in use but appeared to be connected to the pipeline leading into Building 132. No stains were observed within the concrete bermed area.

4.184.2 Operational History and Waste Characteristics

Table 4.184-2 summarizes the operational history and waste characteristics.

Table 4.184-2
AOC ADD 2 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 2	Never operated	The tanks were designed to recover and store coolant from Building 132 machinery.	The system was reportedly never operated. No wastes were generated.	None.

ADD = Additional AOC = Area of Concern No. = Number

The unit was reportedly built in the late 1980s or early 1990s, but was never used (Mazepi and Johnson, pers. comm., 1998). The pipes leading from the tanks to Building 132 never were connected to machinery (Mazepi, pers. comm., 1998). The filter press had been designed to remove metal chips from coolant fluids used in machinery such as lathes and grinders.

4.184.3 Preliminary Assessment Resources

Table 4.184-3 summarizes the resources used and interviews conducted in the PA evaluation.

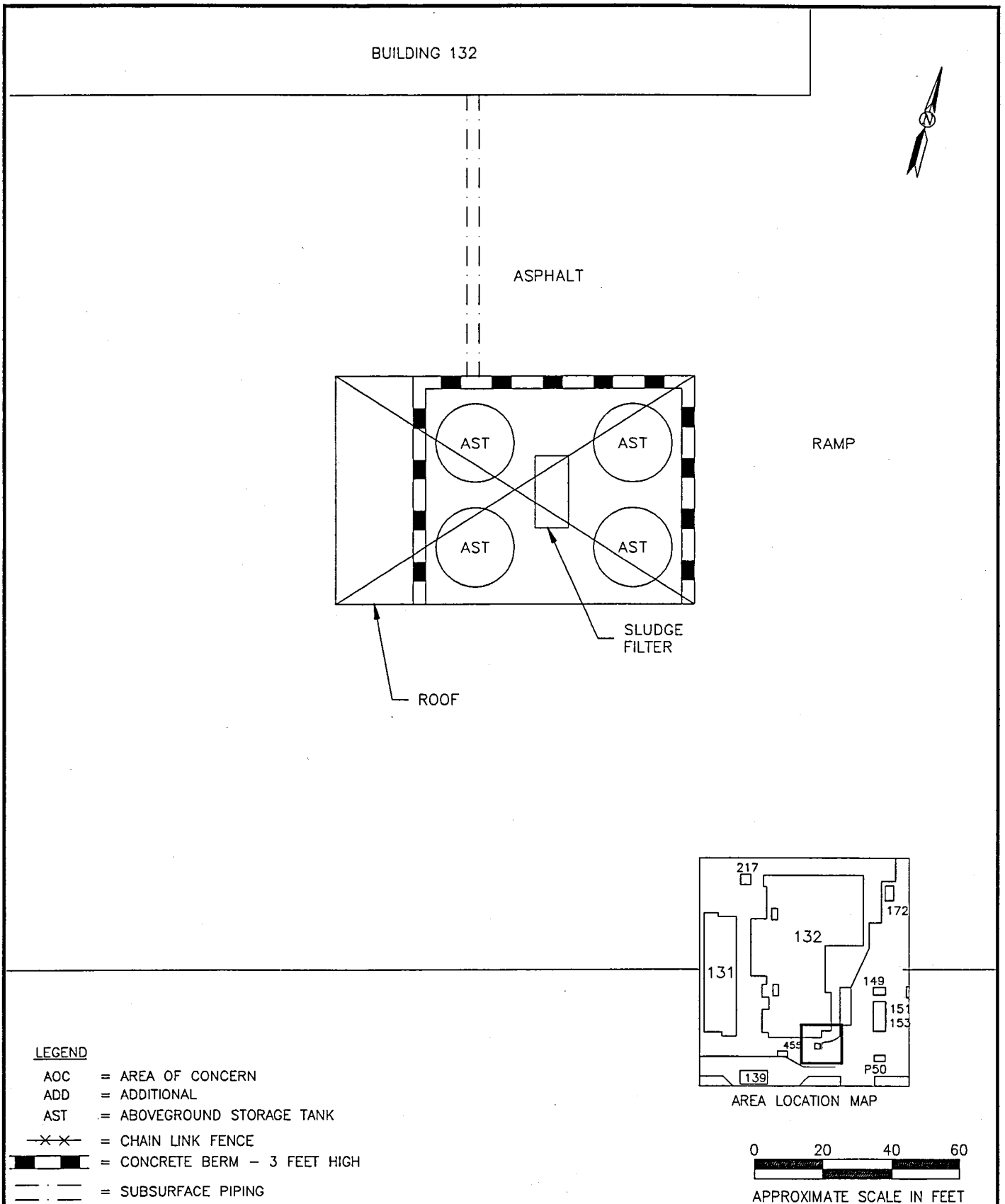
Table 4.184-3
AOC ADD 2 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Personnel Interview	1998	Johnson, LBNSY	Described the AOC and its intended function; never used.
Personnel Interview	1998	Mazepi, LBNSY	Stated that the unit had never been used.

ADD = Additional AOC = Area of Concern LBNSY = Long Beach Naval Shipyard

4.184.4 PA Recommendations

No further action is recommended for AOC ADD 2 because the coolant recovery tanks were never used. The floor surface within the concrete berm and the asphalt area surrounding the AOC appeared to be in good condition and were not stained.



AREA LOCATION MAP

LEGEND

AOC = AREA OF CONCERN
ADD = ADDITIONAL
AST = ABOVEGROUND STORAGE TANK
= CHAIN LINK FENCE
= CONCRETE BERM – 3 FEET HIGH
= SUBSURFACE PIPING

0 20 40 60

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.184-1

MODIFIED BY: J. Brown PROJECT NO. 6210-014

AOC ADD 2
COOLANT RECOVERY TANK
BUILDING 132

GROUP B AREAS OF CONCERN

FIGURE
4.184-1

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.184-2 Coolant Recovery Tanks South of Building 132 (AOC ADD 2) Facing South 9/23/98

4.185 WOOD BLOCK FLOORS AT BUILDING 50 (AOC ADD 3)

This section presents a description of the Wood Block Floors at Building 50 (AOC ADD 3), their operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 3 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.185.1 Site Description

Table 4.185-1 summarizes the location and characteristics of AOC ADD 3. A site map is provided as Figure 4.185-1. A site photograph is shown in Figure 4.185-2.

Table 4.185-1
AOC ADD 3 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 3	Wood blocks located along the north central portion and southwestern room inside Building 50.	D-16, D-17, D-18	Wood blocks (approximately 8 inches long by 4 inches wide by 4 inches thick) composing the floor surface of work areas.	Wood block floors underlain by concrete.	Approximately 10,000 square feet of wood block flooring.

ADD = Additional AOC = Area of Concern No. = Number

During the December 1998 site reconnaissance, the wood block floors at Building 50 were inspected. The building was no longer in use and no evidence of past operations was observed. Certain wood blocks inside the north central portion of the building appeared to be stained.

4.185.2 Operational History and Waste Characteristics

Table 4.185-2 summarizes the operational history and waste characteristics.

Table 4.185-2
AOC ADD 3 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 3	1940s to 1990s	General storage, packing, and shipping.	Potential for spills onto the wood block floors from phosphoric acid, wetting agents, chromate inhibitor, and TCE.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number TCE = Trichloroethylene

Building 50 was used for general storage, packing, and shipping operations. As part of the packing and preservation operations, two aboveground process tanks were used in Building 50:

- A de-rusting tank that held approximately 270 gallons of Tec 360-acid (cleaner with solvents), phosphoric acid, wetting agents, and chromate inhibitor (Brown and Caldwell 1969). This solution was discharged to a 12-inch storm drain south of the building approximately once per year (Brown and Caldwell 1969). The 1969 IWS report recommended diverting the discharged waste to the sanitary sewer, although it is unknown if this diversion occurred.
- A tank that held approximately 50 gallons of TCE that was hauled away by LBNSY for disposal every 6 months (Brown and Caldwell 1969).

These two tanks appear to have been used in the southern part of the building where concrete floors existed, not where the wood block floors were located. During the December 1998 site reconnaissance, the tanks were no longer present and it is unknown when they were removed. The source of the oil-stained wood blocks is not known.

Building 50 was deconstructed by POLB in Spring 1999.

4.185.3 Preliminary Assessment Resources

Table 4.185-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.185-3
AOC ADD 3 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Survey	1969	Brown and Caldwell	Process tanks used during Building 50 operations.
EBS	1996	LBNSY-ED	Describes general information regarding Building 50.
Public Works Property Record	1996	LBNSY-ED	Described location, general dimensions of building, and year constructed.

ADD = Additional
AOC = Area of Concern
EBS = Environmental Baseline Survey
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.185.4 PA Recommendations

Further action was recommended for AOC ADD 3 because small portions of wood block floors were stained. One wood block sample from an oil-stained area in the northern portion of the building was recommended for collection and analysis.

4.185.5 Number of Samples and Analyses

Two wood block samples were collected from AOC ADD 3 by URS Greiner Woodward Clyde (URSGWC) for the Port of Long Beach to expedite property reuse. The Port of Long Beach took responsibility of this investigation and performed this work with regulatory agency approval.

The two samples were collected on 6 January 1999 and the sampling results were presented in a letter report addressed to the regulatory agencies on 23 February 1999. The report, *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, was issued by the Port of Long Beach on 23 February 1999 (URSGWC 1999) (see Appendix P). The samples were analyzed for the analytical categories indicated in Table 4.185-4. One wood block sample was collected where the wood block floor was stained with oil, and the other was collected from a relatively unstained area. The sampling locations are indicated in Figure 4.185-3.

Table 4.185-4
AOC ADD 3 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	PCBs	Cyanide	TPH-Gasoline	TPH-Extractables
Wood Block	2	2	2	2	2	2	2

ADD = Additional
AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.185.6 Analytical Results

Analytical results for the wood block floor samples from Building 50 (AOC ADD 3) are discussed below. The Port of Long Beach and their contractors performed sampling and laboratory analyses. Organic compound sample results are shown in Table 4.185-5, while metals and cyanide results are shown in Table 4.185-6. Sampling results are presented in Appendix P and summarized in Figure 4.185-3.

Five VOCs, twenty-two SVOCs, TPH-gasoline, and TPH-extractables were detected in both wood block samples. Some SVOCs and some TPH carbon chain ranges were higher in the stained wood block sample, while other analytes were higher in the unstained block. PCB Aroclor 1260 was detected in the sample from the stained area at a concentration of 8.68 mg/kg. Twelve of 17 metals were detected in at least one sample.

4.185.7 Data Comparison to Screening Criteria

None of the analytes detected in the wood block samples were above the California TTLC regulatory levels or the U.S. EPA RCRA criteria. The wood block floors will be disposed of properly by the Port of Long Beach contractors in accordance with federal, state, and local regulations (URSGWC 1999).

4.185.8 Data Validation and Usability

Data were not validated following U.S. EPA functional guidelines, but a data quality review was performed by comparing laboratory quality control results to established acceptance criteria for precision, accuracy, representativeness, comparability, and completeness (URSGWC 1999). According to the review, data were acceptable without qualification. No VOCs were reported in the equipment blank sample.

4.185.9 Recommendations

The Port of Long Beach report dated 23 February 1999 concluded that no further action was recommended for the Wood Block Floors at Building 50 (AOC ADD 3) because samples were collected but no analytes exceeded their screening criteria. The wood block floors were

planned for removal and proper disposal by the Port of Long Beach and contractors in accordance with local, state, and federal regulations (URSGWC 1999). Deconstruction activities occurred in early 1999.

Table 4.185-5
AOC ADD 3 Sampling Results Summary for Organics (Wood Blocks)
Port of Long Beach January 1999

WOOD BLOCK						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**US EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]			Stained, Unstained			
Acetone	2	1	57.2, ND	NA	NA	0
p-Isopropyltoluene	2	1	0.16, ND	NA	NA	0
4-Methyl 2-Pentanone	2	1	1.03, ND	NA	NA	0
Naphthalene	2	2	4.94, 2.74	NA	NA	0
Toluene	2	1	0.20, ND	NA	NA	0
SVOCs (64 analytes)[b]						
Phenol	2	1	ND, 110	NA	NA	0
4-Methyl Phenol	2	1	ND, 120	NA	NA	0
2,4-Dimethyl Phenol	2	1	ND, 60	NA	NA	0
Naphthalene	2	2	1,820, 490	NA	NA	0
2-Methyl Naphthalene	2	2	310, 250	NA	NA	0
1-Methyl Naphthalene	2	2	150, 140	NA	NA	0
Acenaphthylene	2	1	ND, 130	NA	NA	0
Acenaphthene	2	2	490, 260	NA	NA	0
Dibenzofuran	2	2	310, 730	NA	NA	0
Fluorene	2	2	300, 240	NA	NA	0
Phenanthrene	2	2	2,430, 2,970	NA	NA	0
Anthracene	2	2	590, 820	NA	NA	0
Fluoranthene	2	2	2,070, 2,120	NA	NA	0
Pyrene	2	2	500, 2,430	NA	NA	0
Benzo(a)anthracene	2	2	510, 990	NA	NA	0
Chrysene	2	2	460, 1,180	NA	NA	0
Benzo(b)fluoranthene	2	2	560, 480	NA	NA	0
Benzo(k)fluoranthene	2	2	480, 600	NA	NA	0
Benzo(a)pyrene	2	2	560, 600	NA	NA	0
Indeno(1,2,3-c,d)pyrene	2	2	170, 210	NA	NA	0
Dibenz(a,h)anthracene	2	2	80, 100	NA	NA	0
Benzo(g,h,i)perylene	2	2	150, 200	NA	NA	0
PCBs						
Aroclor 1260	2	1	8.68	50	500[c]	0
TPH-Gasoline	2	2	1430, 9.9	NA	NA	0

Table 4.185-5 (continued)
AOC ADD 3 Sampling Results Summary for Organics (Wood Blocks)
Port of Long Beach January 1999

WOOD BLOCK						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**US EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
TPH-Extractables[d]						
C7-C8	2	0	ND	NA	NA	0
C9-C10	2	1	60, ND	NA	NA	0
C11-C12	2	1	53, ND	NA	NA	0
C13-C14	2	1	ND, 53	NA	NA	0
C15-C16	2	2	100, 258	NA	NA	0
C17-C18	2	2	231, 883	NA	NA	0
C19-C20	2	2	194, 595	NA	NA	0
C21-C22	2	2	393, 1,150	NA	NA	0
C23-C24	2	2	363, 394	NA	NA	0
C25-C28	2	2	1,160, 1,260	NA	NA	0
C29-C32	2	2	1,300, 1,340	NA	NA	0
C33-C36	2	2	949, 1,140	NA	NA	0
Total Extractables	2	2	4803, 7073	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.
(b) If not listed in this table, the remaining analytes were not detected.
(c) 40 CFR 761.
(d) C7, for example, means carbon chain length of 7.

ADD = Additional
AOC = Area of Concern
CFR = Code of Federal Regulations
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
NR = Not Reported
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
TSCA = Toxic Substances Control Act
VOCs = Volatile Organic Compounds

Table 4.185-6
AOC ADD 3 Sampling Results Summary for Metals and Cyanide (Wood Blocks)
Port of Long Beach January 1999

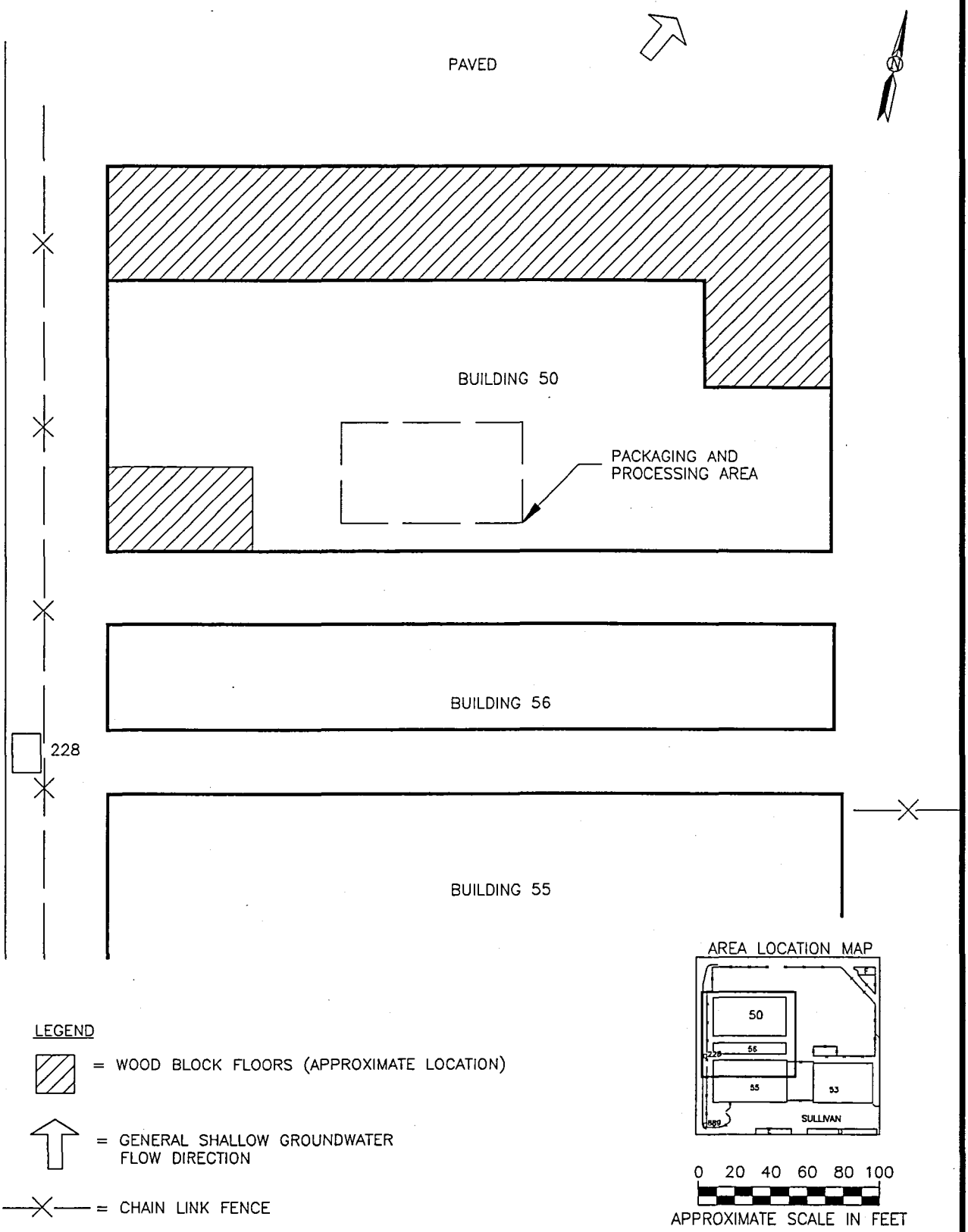
WOOD BLOCK						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**US EPA RCRA Criteria[b] (mg/kg)**	**No. of Detections above Criteria**
Antimony	2	2	2.48, 2.17	500	NA	0
Arsenic	2	2	0.76, 1.09	500	100	0
Barium	2	2	16.0, 7.21	10,000	2,000	0
Beryllium	2	0	ND	75	NA	0
Cadmium	2	1	0.86	100	20	0
Chromium	2	2	2.29, 0.72	2,500	100	0
Cobalt	2	0	ND	8,000	NA	0
Copper	2	2	22.8, 4.54	2,500	NA	0
Lead	2	2	51.5, 10.7	1,000	100	0
Mercury	2	0	ND	20	4	0
Molybdenum	2	0	ND	3,500	NA	0
Nickel	2	2	1.96, 0.36	2,000	NA	0
Selenium	2	2	0.81, 0.96	100	20	0
Silver	2	1	1.01	500	100	0
Thallium	2	0	ND	700	NA	0
Vanadium	2	1	0.85	2,400	NA	0
Zinc	2	2	91.3, 23.8	5,000	NA	0
Cyanide	2	ND	ND, ND	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
TCLP = Toxicity Characteristic Leachate Procedure



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 3 WOOD BLOCK FLOORS BUILDING 50	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.185-1	GROUP B AREAS OF CONCERN	4.185-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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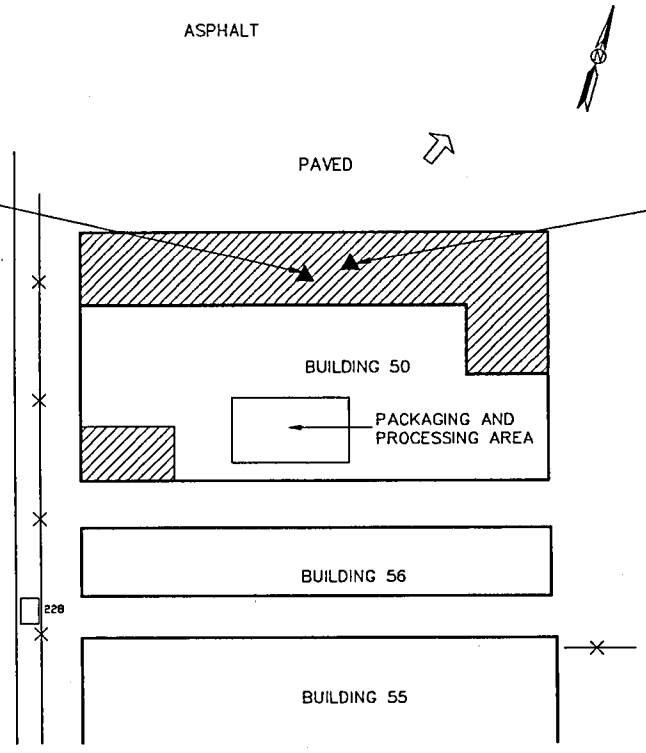
Figure 4.185-2 Wood Block Floors at Building 50 (AOC ADD 3) Facing Northwest 12/15/98

WB-2 (UNSTAINED)	
ANALYTE	CONC. (mg/kg)
PHENOL	110
4-METHYL PHENOL	120
2,4-DIMETHYL PHENOL	60
NAPHTHALENE	2.74/490(a)
2-METHYL NAPHTHALENE	250
1-METHYLNAPHTHALENE	140
ACENAPHTHYLENE	130
ACENAPHTHENE	260
DIBENZOFURAN	730
FLUORENE	240
PHENANTHRENE	2,970
ANTHRACENE	820
FLUORANTHENE	2,120
PYRENE	2,430
BENZO(a)ANTHRACENE	990
CHRYSENE	1,180
BENZO(b)FLUORANTHENE	480
BENZO(k)FLUORANTHENE	600
BENZO(a)PYRENE	600
INDENO(1,2,3-C,D)PYRENE	210
DIBENZ(A,H)ANTHRACENE	100
BENZO(G,H,I)PERYLENE	200
TPH-GASOLINE	9.9
TPH-C7 TO C36	7,073



WB-1 (STAINED)	
ANALYTE	CONC. (mg/kg)
ACETONE	57.2
P-ISOPROPYLTOLUENE	0.16
4-METHYL 2-PANTANONE	1.03
NAPHTHALENE	4.94/1,820(a)
TOLUENE	0.20
2-METHYL NAPHTHALENE	310
1-METHYLNAPHTHALENE	150
ACENAPTHENE	490
DIBENZOFURAN	310
FLUORENE	300
PHENANTHRENE	2,430
ANTHRACENE	590
FLUORANTHENE	2,070
PYRENE	500
BENZO(a)ANTHRACENE	510
CHRYSENE	460
BENZO(b)FLUORANTHENE	560
BENZO(k)FLUORANTHENE	480
BENZO(a)PYRENE	560
INDENO(1,2,3-C,D)PYRENE	170
DIBENZ(A,H)ANTHRACENE	80
BENZO(G,H,I)PERYLENE	150
PCB AROCLOR 1260	8,680
TPH-GASOLINE	1430
TPH-C7 TO C36	4,803

LEGEND

ADC = AREA OF CONCERN
ADD = ADDITIONAL
PCB = POLYCHLORINATED BIPHENYL
TPH = TOTAL PETROLEUM HYDROCARBONS
U.S. EPA = UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

= WOOD BLOCK FLOORS (APPROXIMATE LOCATION)

▲ = WOOD BLOCK FLOOR SAMPLING LOCATION

= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION

= CHAIN LINK FENCE

WB-2 = SAMPLE NAME (TYPICAL)
WHERE WB = WOOD BLOCK SAMPLE
WHERE 2 = SECOND SAMPLE
mg/kg = MILLIGRAMS PER KILOGRAM
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION
(a) = RESULTS BY U.S. EPA METHODS 8260B AND 8270C, RESPECTIVELY

NOTE: THIS FIGURE SHOWS ALL ORGANIC DETECTIONS. NO METALS WERE DETECTED ABOVE SCREENING CRITERIA.

0 20 40 60 80 100
APPROXIMATE SCALE IN FEET

SOURCE OF DATA: PORT OF LONG BEACH 1999

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.185-3
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING LOCATION AND RESULTS SUMMARY, JANUARY 1999
WOOD BLOCK FLOORS
BUILDING 50 (ADD 3)
GROUP B AREAS OF CONCERN

FIGURE
4.185-3

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.185-12

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4.186 BUILDING 109 (AOC ADD 4)

This section presents a description of Building 109 (AOC ADD 4), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 4 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.186.1 Site Description

Table 4.186-1 summarizes the location and characteristics of AOC ADD 4. A site map is provided as Figure 4.186-1. A site photograph is shown in Figure 4.186-2.

Table 4.186-1
AOC ADD 4 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 4	Building 109 and the area north of Building 109.	H-28, I-28	Aluminum stripping tank.	1 metal tank	Approximately 4,400 gallon capacity.
			Steel stripping tank.	1 metal tank	Approximately 4,400 gallon capacity.
			Rinse tank.	1 metal tank	4,400-gallon capacity.

Source: Brown and Caldwell 1969

ADD = Additional AOC
AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number

During the December 1998 site reconnaissance, the AOC location was inspected. The building was no longer in use, and the process tanks north of Building 109 were no longer present. The area north of Building 109 is currently occupied by Building 211, which was built in 1984 on an asphalt foundation. The process tanks were most likely located where Building 211 currently stands. The asphalt beneath Building 211 could not be inspected.

4.186.2 Operational History and Waste Characteristics

Table 4.186-2 summarizes the operational history and waste characteristics.

Table 4.186-2
AOC ADD 4 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 4	1940s to approximately 1984	Aluminum stripping.	Paint and varnish remover.	4,400 gallons hauled away by LBNSY approximately every 6 months.
		Steel stripping.	Sodium hydroxide.	4,400 gallons hauled away by LBNSY approximately every 6 months.
		Rinsing.	Wastewater from stripping operations.	4,400 gallons discharged to sanitary sewer approximately every 6 months.

Source: Brown and Caldwell 1969

ADD = Additional AOC
AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number

Building 109 was a former mold (i.e., pattern) shop, former welding school, and former paint shop. A 3,000-gallon paint thinner UST (UST 109.1), installed in 1960, was removed from the western side of Building 109 in 1992. A SCAPS subsurface investigation, performed in 1997, indicated no residual contamination in soil or groundwater (BNI 1998b). Site closure was approved by the Long Beach Department of Health and Human Services as indicated in a letter dated 11 September 1998.

Outside the northern end of Building 109, three aboveground process tanks were used for paint removal operations: an aluminum stripping tank, a steel stripping tank, and an associated rinse tank. The aluminum stripping tank contained approximately 4,400 gallons of paint and varnish remover and the steel stripping tank contained approximately 4,400 gallons of sodium hydroxide solution (Brown and Caldwell 1969). The contents of each of these tanks were hauled away for disposal by LBNSY approximately every six months (Brown and Caldwell 1969). A rinse tank was also used in association with these operations. The rinse tank contained approximately 4,400 gallons of rinsewater and was discharged to the sanitary sewer approximately every six months.

A 1977 Environmental Engineering Survey for LBNSY shows these tanks were still in operation (CDM 1977), but documents from the 1989 to 1991 time period do not list these tanks in use. The tanks were most likely removed in 1984 when Building 211 was constructed.

4.186.3 Preliminary Assessment Resources

Table 4.186-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.186-3
AOC ADD 4 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Untitled Figure	Unknown	LBNSY	Shows location of "vats" north of Building 109.
Industrial Waste Survey	1969	Brown and Caldwell	Paint removal operations including process tank information.
Environmental Engineering Survey	1977	CDM	Paint removal operations including process tank information.
RCRA Facility Assessment	1989	DTSC	No mention of Building 109 process tanks.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	No mention of Building 109 process tanks.
Industrial Wastewater Discharge Study	1991	SCS Engineers	No mention of Building 109 process tanks.
EBS	1996	LBNSY-ED	General Building 109 information.
Public Works Property	1996	LBNSY-ED	General Building 109 information.

ADD = Additional AOC
AOC = Area of Concern
CDM = Camp, Dresser & McKee
DTSC = Department of Toxic Substances Control
EBS = Environmental Baseline Survey
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
RCRA = Resource Conservation and Recovery Act

4.186.4 PA Recommendations

Further action was recommended for AOC ADD 4 because process tank operations were conducted from the 1940s to the 1980s, and these operations may have included the past use of hazardous materials (paint, varnish remover, and sodium hydroxide) that may have spilled or leaked to soil and groundwater beneath the pavement via cracks. Two soil and two groundwater samples north of Building 109 were recommended to further characterize the soil and groundwater in the area (CDM Federal 1999).

4.186.5 Number of Samples and Analyses

As described in Work Plan Addendum Number 2 (CDM Federal 1999), two soil and two groundwater samples were collected from AOC ADD 4. The samples were collected on 25 and 26 February 1999 and subsequently analyzed for the analytical categories indicated in Table 4.186-4. The two sampling locations were on opposite sides of Building 211 (Figure 4.186-3) where the former process tanks were situated.

Table 4.186-4
AOC ADD 4 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	pH
Soil	2	2	2	2
Groundwater	2	2	2	2

ADD = Additional AOC
AOC = Area of Concern
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.186.6 Analytical Results

Analytical results are discussed below for the soil and groundwater samples. Sample results for organics are shown in Table 4.186-5, while metals and pH results are shown in Table 4.186-6. The sampling results are shown in Figure 4.186-4.

4.186.6.1 Soil

VOCs were not detected in the soil samples collected at AOC ADD 4. The SVOC pyrene was detected at a concentration of 0.034J mg/kg. Twelve of the 17 metals were detected in the soil. The pH values of the two soil samples were 8.00 and 8.98.

4.186.6.2 Groundwater

VOCs, SVOCs, and 8 of the 17 metals were not detected in the samples collected at AOC ADD 4. The pH values of the two groundwater samples were 7.03 and 7.31.

4.186.7 Data Comparison to Screening Criteria

All analytes were detected below their respective screening criteria and pH levels were within the criteria range of 6.0 to 9.0.

4.186.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.186.9 Recommendations

No further action is recommended for the Building 109 (AOC ADD 4) because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.186-5
AOC ADD 4 Sampling Results Summary for Organic Compounds
February 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]	2	0	ND	NA	0	2	0	ND	NA	0
SVOCs (64 analytes)[c]										
Pyrene	2	1	0.034J	26,000	0	2	0	ND	8.8×10^{-6}	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.186-6
AOC ADD 4 Sampling Results Summary for Metals and pH
February 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	1	0.15	750	11.3	0
Arsenic	2	2	2.7, 4.8	3.0	17.5	0
Barium	2	2	56.2, 89.0	100,000	275	0
Beryllium	2	0	ND	3,400	1.4	0
Cadmium	2	0	ND	930	1.7	0
Chromium	2	2	14.2, 21.5	450	60.9	0
Cobalt	2	2	7.0, 9.6	29,000	24.5	0
Copper	2	2	7.5, 15.1	70,000	798.7	0
Lead	2	2	3.4, 5.4	1000	185.2	0
Mercury	2	2	0.040, 0.055	560	2.5	0
Molybdenum	2	1	0.039	9,400	NA	0
Nickel	2	2	8.7, 15.3	37,000	32.6	0
Selenium	2	0	ND	9,400	1.4	0
Silver	2	0	ND	9,400	1.5	0
Thallium	2	0	ND	150	4.2	0
Vanadium	2	2	24.6, 34.2	13,000	84.9	0
Zinc	2	2	32.5, 45.4	100,000	844.9	0
pH	2	2	8.00, 8.98 (pH units)	NA	NA	0

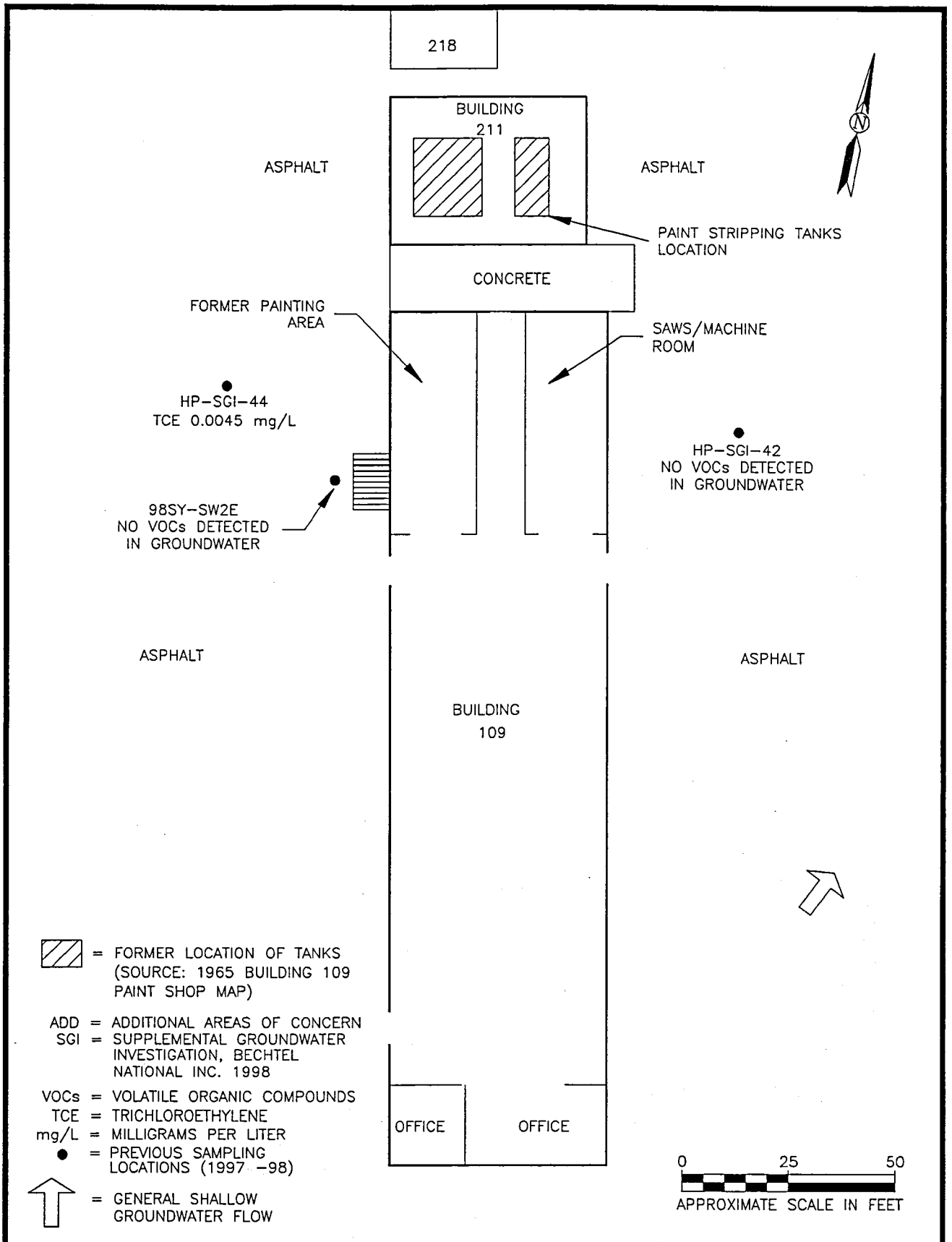
Table 4.186-6 (continued)
AOC ADD 4 Sampling Results Summary for Metals and pH
February 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	2	0	ND	1.2	0.0616	0
Arsenic	2	1	0.0035	0.008	0.0276	0
Barium	2	2	0.115, 0.0662J	1[d]	0.1777	0
Beryllium	2	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	2	0	ND	0.001	0.0017	0
Chromium	2	1	0.0066	190	0.0029	0
Cobalt	2	0	ND	2.2[d]	0.0071	0
Copper	2	0	ND	0.003	0.1072	0
Lead	2	0	ND	0.002	0.028	0
Mercury	2	1	0.00023	$4.0x10^{-5}$	0.0009	0
Molybdenum	2	2	0.0167, 0.0086J	0.18[d]	NA	0
Nickel	2	2	0.0033	0.005	0.0958	0
Selenium	2	1	0.0082	0.015	0.040	0
Silver	2	0	ND	0.0007	0.0072	0
Thallium	2	0	ND	0.014	0.0075	0
Vanadium	2	1	0.00095	0.26[d]	0.0107	0
Zinc	2	1	0.0222	0.020	0.291	0
pH	2	2	7.03, 7.31 (pH units)	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 4 BUILDING 109	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.186-1		4.186-1
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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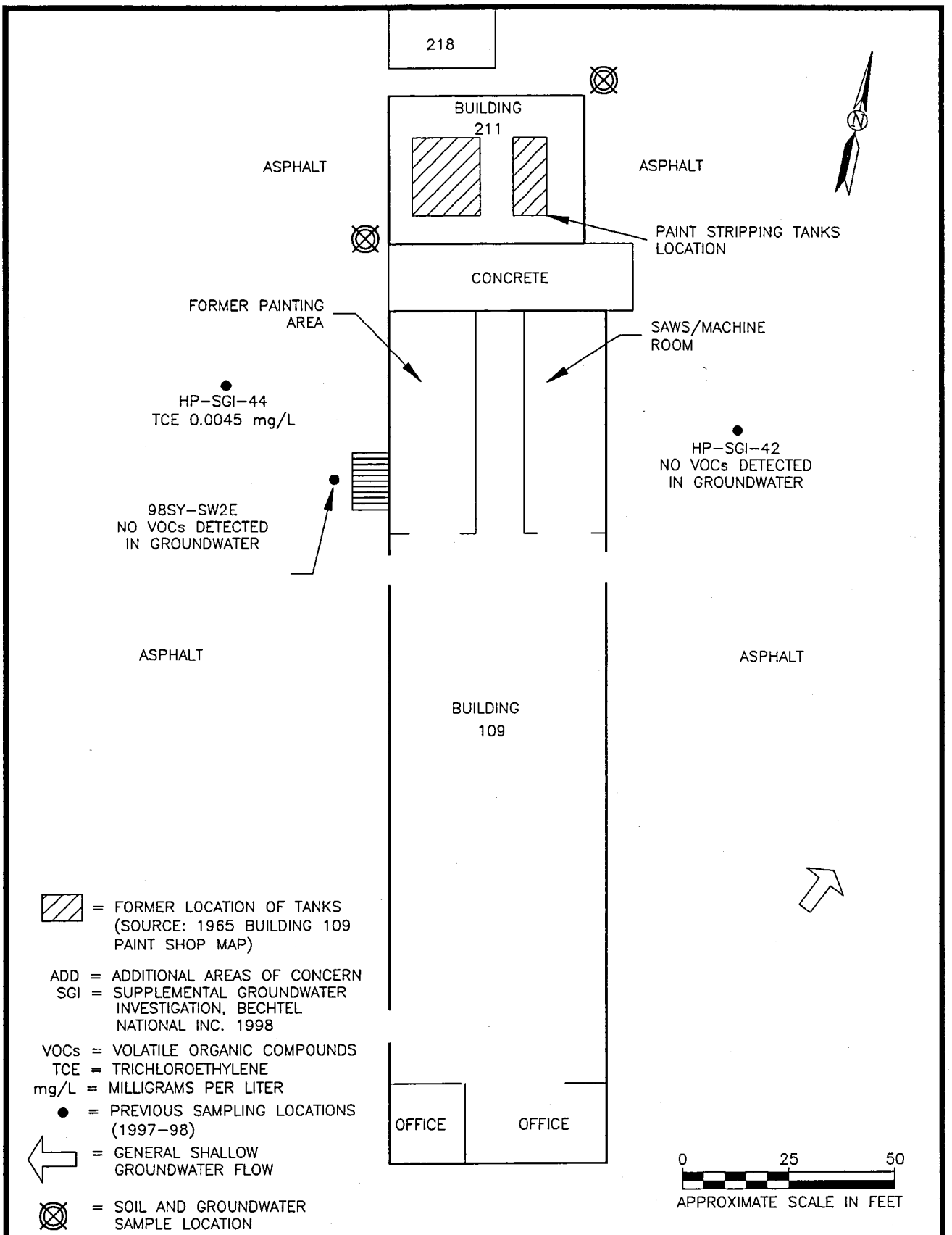
Figure 4.186-2 Former Process Tank Area (AOC ADD 4), North of Building 109 Facing East. Building 211 in center, Building 109 on right 12/15/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AOC ADD 4 BUILDING 109 GROUP B AREAS OF CONCERN	FIGURE 4.186-3
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.186-3 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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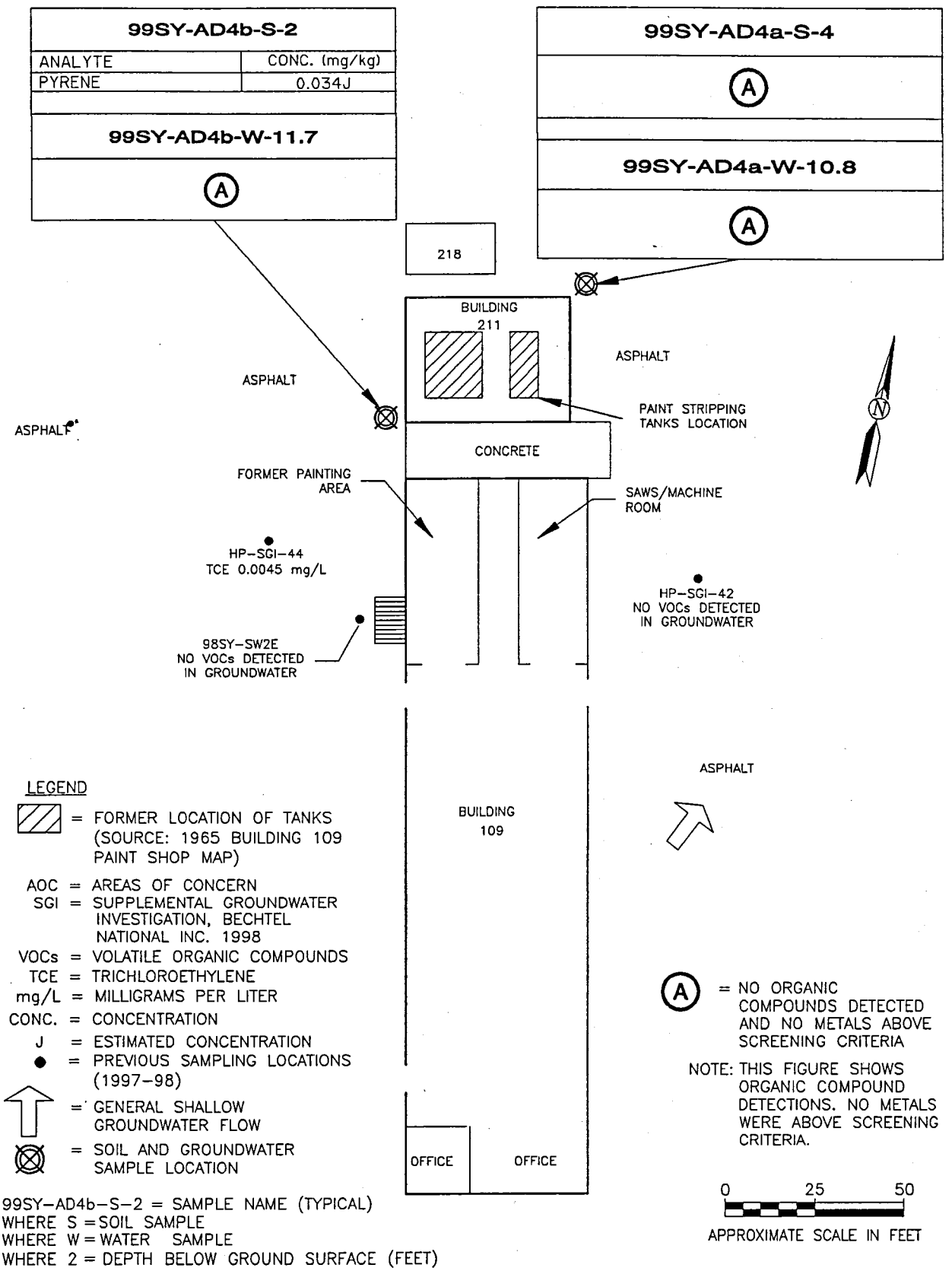

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING RESULTS SUMMARY, FEBRUARY 1999 AOC ADD 4 BUILDING 109 GROUP B AREAS OF CONCERN	FIGURE 4.186-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.186-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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4.187 PROCESS TANKS AT BUILDING 131 (AOC ADD 5)

This section presents a description of the Process Tanks at Building 131 (AOC ADD 5), their operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 5 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.187.1 Site Description

Table 4.187-1 summarizes the location and characteristics of AOC ADD 5. A site map is provided as Figure 4.187-1. Site photographs are shown in Figures 4.187-2 and 4.187-3.

Table 4.187-1
AOC ADD 5 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions (gallons)
ADD 5	Northern central end inside Building 131	H-30, H-31	Five pipe cleaning tanks: - 1 caustic tank - 1 degreasing tank - 1 cut muriatic acid tank - 1 sulfuric acid tank - 1 rinse tank Three pipe paint stripping tanks: - 1 aluminum stripping tank - 1 acid tank - 1 rinse tank	Six stripping tanks and two rinse tanks (made of metal)	1,100 500 900 1,100 1,100 400 500 600

ADD = Additional AOC = Area of Concern No. = Number

During the October and December 1998 site reconnaissances, the AOC location was inspected. The building was no longer in use. The three pipe paint stripping tanks, formerly in the north central room, were no longer onsite and it is unknown when they were removed. One set of cleaning tanks was observed in the northwestern portion of Building 131. These tanks, inspected as part of the Group A POI report, used non-hazardous soap for cleaning personal protective equipment (LBNSY-ED 1997). A ventilation system (i.e., hood) was observed above one of the current tanks. It is not known whether the current tanks were used during former operations or if the current tanks replaced the former cleaning tanks.

4.187.2 Operational History and Waste Characteristics

Table 4.187-2 summarizes the operational history and waste characteristics.

Table 4.187-2
AOC ADD 5 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 5	Pre-1969 to approximately 1988	Pipe cleaning using five tanks.	Cee Bee J84A, caustic soda and sodium gluconate.	Sludge, hauled away by LBNSY every 3 months, liquid reused.
			Degreasing solvent dry cleaner (number 6850-285-8012)	Sludge hauled away by LBNSY every 24 months, liquid reused.
			Hydrochloric acid	Hauled away by LBNSY every 4 months.
			Sulfuric acid	Discharged to the storm sewer every 12 months.
			Rinsewater	Continuously discharged to the storm sewer.
		Pipe paint stripping.	Cee Bee A215, moderately alkaline, chlorinated solvents, phenolic bodies, sodium chromate and wetting agents.	Discharged every 6 months (location unknown).
			Sulfuric acid	Discharged every 12 months (location unknown).
			Rinsewater	Discharged continuously to the sanitary sewer.

Source: Brown and Caldwell, 1969

ADD = Additional AOC
AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
No. = Number

Building 131 was used from 1940 to 1944 as a Heavy Materials Storage Warehouse. It later became a Pipefitting Shop. Five aboveground pipe cleaning dip tanks and three aboveground paint stripping tanks in the north central portion of the building were used in association with these operations (Brown and Caldwell 1969). An Environmental Engineering Survey conducted in 1977 also identified these tanks (CDM 1977).

The five pipe cleaning tanks in the north central portion of the building consisted of a caustic tank, a degreasing tank, a hydrochloric acid tank, a sulfuric acid tank, and a rinse tank. Chemicals used during the operation included Cee Bee J84A (caustic soda and sodium gluconate), solvent dry cleaner (identification number 6850-285-8012, exact contents unknown), hydrochloric acid, and sulfuric acid. Wastes were hauled away by LBNSY as necessary (Brown and Caldwell 1969).

The three pipe paint stripping tanks in the north central portion of the building consisted of an aluminum stripping tank, an acid tank, and a rinse tank. Chemicals used during the operation included Cee Bee A215 (moderately alkaline, containing chlorinated solvents, phenols, sodium

chromate, and wetting agents), and sulfuric acid. No information was available regarding the waste discharge (Brown and Caldwell 1969). These three tanks were formerly located in the north central room that was adjacent to the eastern side of the former cleaning tanks; it is unknown exactly when they were removed.

Sometime around 1988, Building 131 operations changed, and the building was used as a central tool shop (Archiplan 1988). North of Building 131 was an oil storage compound that was used from 1943 to 1996 (BNI 1999). The oil storage compound appears to be unrelated to the cleaning and stripping tanks.

4.187.3 Preliminary Assessment Resources

Table 4.187-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.187-3
AOC ADD 5 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Survey	1969	Brown and Caldwell	Described pipe cleaning and paint stripping operations.
Environmental Engineering Survey	1977	CDM	Described pipe cleaning and paint stripping operations.
RCRA Facility Assessment	1989	DTSC	Building 131 operations.
Comprehensive Hazardous Waste Minimization Survey	1990	NEESA	Building 131 operations.
EBS	1996	LBNSY-ED	General Building 131 information.
Public Works Property Records	1996	LBNSY-ED	General Building 131 information.
Final Preliminary Assessment of Group A Points of Interest	1997	LBNSY-ED	Identified cleaning tanks located at the Northwestern portion of Building 131.
Personnel Interview	1998	Johnson, LBNSY	General Building 131 information.
Supplemental Groundwater Investigation, Installation Restoration Program Sites 9, 12, and 13	1999	Bechtel National, Inc.	Oil storage compound north of Building 131; analytical results for samples collected in and around Building 131.

ADD = Additional AOC
CDM = Camp, Dresser, & McKee
DTSC = Department of Toxic Substances
EBS = Environmental Baseline Survey
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division
NEESA = Naval Energy and Environmental Support Activity
RCRA = Resource Conservation and Recovery Act

4.187.4 PA Recommendations

Further action was recommended for AOC ADD 5 because operations had been conducted since the 1940s, solvents and acids were used, and the spill and leak history is unknown. Five soil and five groundwater samples from locations north of Building 131 were recommended in Work Plan Addendum Number 2 (CDM Federal 1999).

4.187.5 Number of Samples and Analyses

Five soil and four groundwater samples were collected at the locations identified in Figure 4.187-4. The samples were collected between 1 and 10 March 1999. Samples were analyzed for the analytical categories indicated in Table 4.187-4. The samples were collected from locations in various directions around the former process tanks to supplement data collected in the SGI report (BNI 1999). The purpose of the SGI was to delineate the extent of chlorinated VOC plumes in groundwater in the area near and around Building 129. The area north of Building 131 was well characterized in the SGI report, so sampling for this AOC investigation focused on areas to the west, south, and east of the former process tanks.

One groundwater sample could not be collected because a second concrete floor was encountered beneath the main floor inside Building 131. The concrete coring subcontractor had cored a hole in the location of the former tanks (sampling location AD5b in Figure 4.187-5), but when the direct push rig attempted sampling at a later date, a second layer of concrete was identified about one foot beneath the main floor. A sample was collected from soil that existed between these two concrete layers, but the rig could not break through the second layer of concrete.

Table 4.187-4
AOC ADD 5 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	pH
Soil	5	5	5	5	5	5	5
Groundwater	4[(a)]	4[(a)]	4[(a) (b)]	4[(a)]	4[(a)]	4[(a)]	2[(a) (c)]

Notes:

(a) No sample could be collected at location AD5b (tank location) because an obstruction was encountered at two feet below ground surface.
(b) Dissolved metals.
(c) The laboratory mistakenly did not analyze two groundwater samples for pH.

ADD = Additional Area of Concern
AOC = Area of Concern
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.187.6 Analytical Results

Analytical results are discussed below for the soil and groundwater samples. Organic compound sample results are shown in Table 4.187-4, while metals results are shown in Table 4.187-5. Figure 4.187-5 summarizes sampling results.

4.187.6.1 Soil

Three VOCs were detected in soil sample 99SY-AD5a-S-6 located west of the tanks: PCE at a concentration of 0.008 mg/kg, 1,1,1-trichloroethane at a concentration of 0.024 mg/kg, and

TCE at a concentration of 0.01 mg/kg. SVOCs and TPH-gasoline were not detected in the soil samples at AOC ADD 5. Fourteen of 17 metals were detected, while pH results ranged from 8.42 to 9.94.

TPH-diesel was detected at a concentration of 2J mg/kg in sample 99SY-AD5a-S-6, at a concentration of 27 mg/kg in sample 99SY-AD5b-S-1, and at a concentration of 1J mg/kg in sample 99SY-AD5c-S-6.

TPH-motor oil was detected at a concentration of 6J mg/kg in sample 99SY-AD5a-S-6, at a concentration of 87 mg/kg in sample 99SY-AD5b-S-1, and at a concentration of 4J mg/kg in sample 99SY-AD5c-S-6. The highest concentrations of both TPH-diesel and TPH-motor oil were in the sample at the location of the former tanks (sample 99SY-AD5b-S-1).

4.187.6.2 Groundwater

Four VOCs, one SVOC, and TPH-diesel were detected in one or more of the four groundwater samples collected at AOC ADD 5. The VOCs detected in the groundwater samples were ethylbenzene, 1,1,1-trichlorethane, o-xylene, and m/p-xylene. The SVOC DEP was detected at a concentration of 0.002J mg/L. The two TPH-diesel detections were 0.2J and 0.1J mg/L.

Nine of 17 metals were detected in the groundwater samples, while the pH results ranged from 7.37 to 7.41.

4.187.7 Data Comparison to Screening Criteria

None of the analytes in the soil and groundwater samples collected at AOC ADD 5 were detected above their respective screening criteria.

4.187.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

One groundwater sample could not be collected, but no significant data gap resulted for the following reason. The other four planned groundwater samples were used to define the extent of contamination to the east, south, and west, so these were the critical samples in assessing the extent of contamination of the plume known to exist north of Building 131. The sample that had been planned at location AD5b was to be used to assess whether a higher concentration existed beneath the tanks' location compared to north of Building 131. The known area of contamination north of Building 131 is being investigated as part of the SGI (BNI 1999).

The TPH-diesel result reported in one of the two groundwater samples should be used with caution because false positives may have occurred, as described in Appendix O.

The laboratory mistakenly did not analyze two groundwater samples for pH. The other two groundwater samples had pH readings of 7.37 and 7.41, midway between the screening criteria of 6.0 to 9.0, so no significant data gap is deemed to have occurred.

4.187.9 Recommendations

No further action is recommended for the Process Tanks at Building 131 because soil and groundwater samples were collected but no analytes exceeded their respective screening criteria.

Table 4.187-5
AOC ADD 5 Sampling Results Summary for Organic Compounds
March 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Ethylbenzene	5	0	ND	230	0	4	1	0.002J	4.1	0
Tetrachloroethene (PCE)	5	1	0.008	16	0	4	0	ND	0.099	0
1,1,1-Trichloroethane	5	1	0.024	1,400	0	4	1	0.001J	540	0
Trichloroethene (TCE)	5	1	0.01	6.1	0	4	0	ND	0.027	0
o-Xylene	5	0	ND	280	0	4	2	0.004J, 0.0004J	1.4[d]	0
M/p-Xylene	5	0	ND	210	0	4	2	0.008, 0.0008J	1.4[d]	0
SVOCs (64 analytes)[c]										
Diethyl phthalate (DEP)	5	0	ND	100,000	0	4	1	0.002J	33	0
TPH-Gasoline	5	0	ND	1,000[b]	0	4	0	ND	NA	0
TPH-Diesel	5	3	2J, 1J, 27J	10,000[b]	0	4	2	0.2J, 0.1J	NA	0
TPH-Motor Oil	5	3	6J, 4J, 87J	50,000[b]	0	4	0	ND	25	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(e) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
N/A = Not Applicable
No. = Number
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.187-6
AOC ADD 5 Sampling Results Summary for Metals and pH
March 1999

SOIL						
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	Background Level[b] (mg/kg)	No. of Detections above Industrial PRG and Background
Antimony	5	3	0.29J, 1.4, 0.19	750	11.3	0
Arsenic	5	5	5.1, 2.6, 2.7J, 13.4J, 1.6J	3.0	17.5	0
Barium	5	5	163J, 75.6J, 65.9, 109, 64.6	100,000	275	0
Beryllium	5	0	ND	3,400	1.4	0
Cadmium	5	1	0.33	930	1.7	0
Chromium	5	5	25.0J, 13.1J, 15.5, 26.9, 11.0	450	60.9	0
Cobalt	5	5	15.3, 7.0J, 3.5, 9.6, 6.6	29,000	24.5	0
Copper	5	5	19.0, 11.6J, 43.1, 20.1, 8.2	70,000	798.7	0
Lead	5	5	5.0, 3.3J, 110, 10.3, 2.3	1000	185.2	0
Mercury	5	3	0.10, 0.026J, 0.085	560	2.5	0
Molybdenum	5	2	9.4, 20.1	9,400	NA	0
Nickel	5	3	20.0, 11.2J, 9.2	37,000	32.6	0
Selenium	5	0	ND	9,400	1.4	0
Silver	5	0	ND	9,400	1.5	0
Thallium	5	0	ND	150	4.2	0
Vanadium	5	5	46.2, 24.7J, 13.1, 30.7, 20.4	13,000	84.9	0
Zinc	5	5	73.5, 33.8, 85.4, 52.7J, 30.5	100,000	844.9	0
pH	5	5	8.45, 9.04, 9.94, 8.42, 8.94	NA	NA	0

Table 4.187-6 (continued)
AOC ADD 5 Sampling Results Summary for Metals and pH
March 1999

GROUNDWATER						
Analytical Parameter	No. of Samples	No. of Detections	Dissolved Concentration (mg/L)	Screening Criteria for Water[c] (mg/L)	Background Level[b] (mg/L)	No. of Detections above Criteria
Antimony	4	2	0.0121, 0.0109	1.2	0.0616	0
Arsenic	4	2	0.0054, 0.0038	0.008	0.0276	0
Barium	4	4	0.129J, 0.0779J, 0.113, 0.0803	1[d]	0.1777	0
Beryllium	4	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	4	0	ND	0.001	0.0017	0
Chromium	4	2	0.0049, 0.0045	190	0.0029	0
Cobalt	4	1	0.0023	2.2[d]	0.0071	0
Copper	4	0	ND	0.003	0.1072	0
Lead	4	0	ND	0.002	0.028	0
Mercury	4	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	4	3	0.0064J, 0.0133, 0.0134	0.18[d]	NA	0
Nickel	4	2	0.0041, 0.0035	0.005	0.0958	0
Selenium	4	4	0.0083, 0.006J, 0.0041, 0.0039	0.015	0.040	0
Silver	4	0	ND	0.0007	0.0072	0
Thallium	4	0	ND	0.014	0.0075	0
Vanadium	4	0	ND	0.26[d]	0.0107	0
Zinc	4	2	0.0073, 0.0056	0.020	0.291	0
pH	2 [e]	2	7.41, 7.37	6.0 to 9.0 (pH units)	NA	0

Note:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(e) Laboratory mistakenly did not analyze two groundwater samples for pH.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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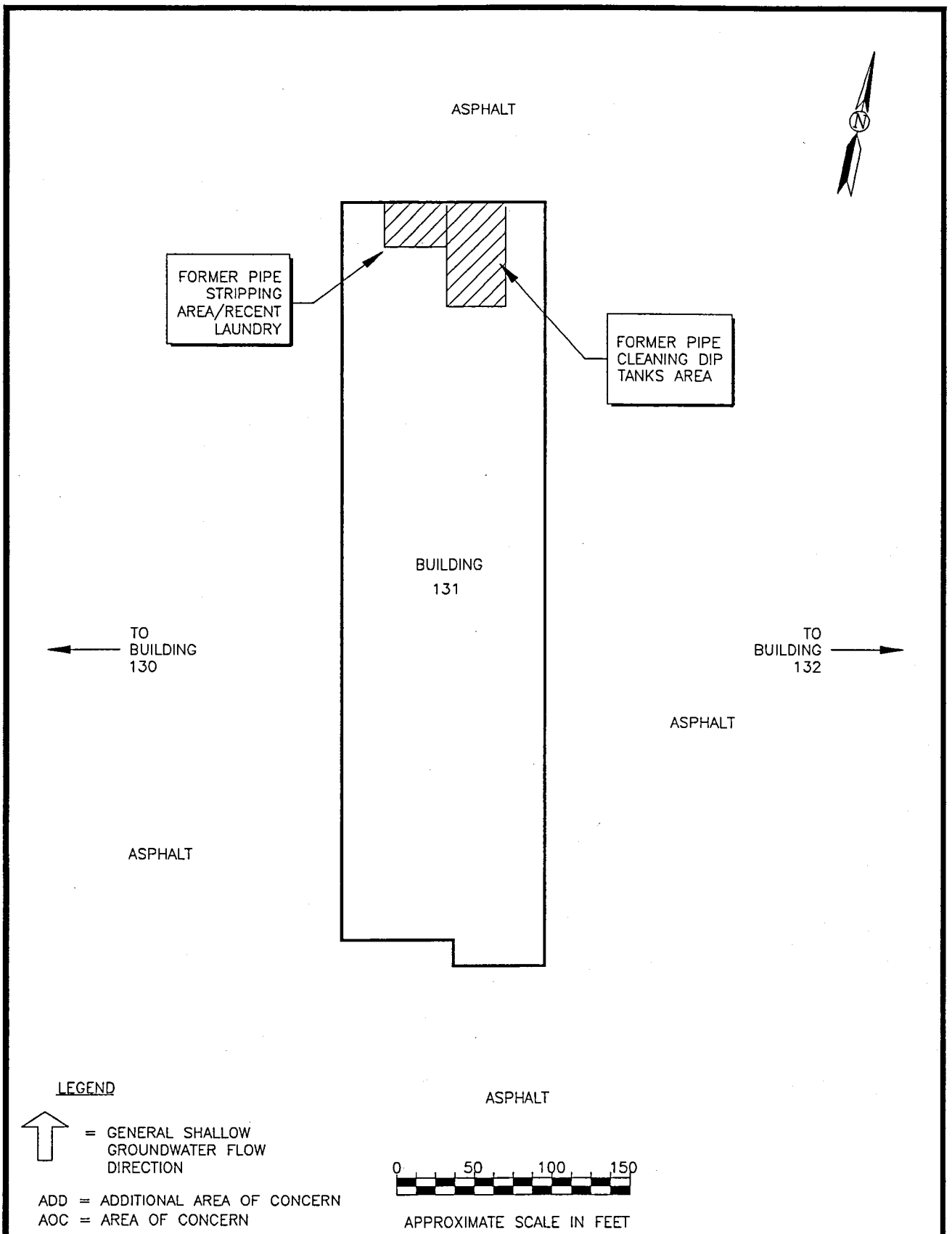

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 5 PROCESS TANKS AT BUILDING 131	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.187-1		4.187-1
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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4.187-11

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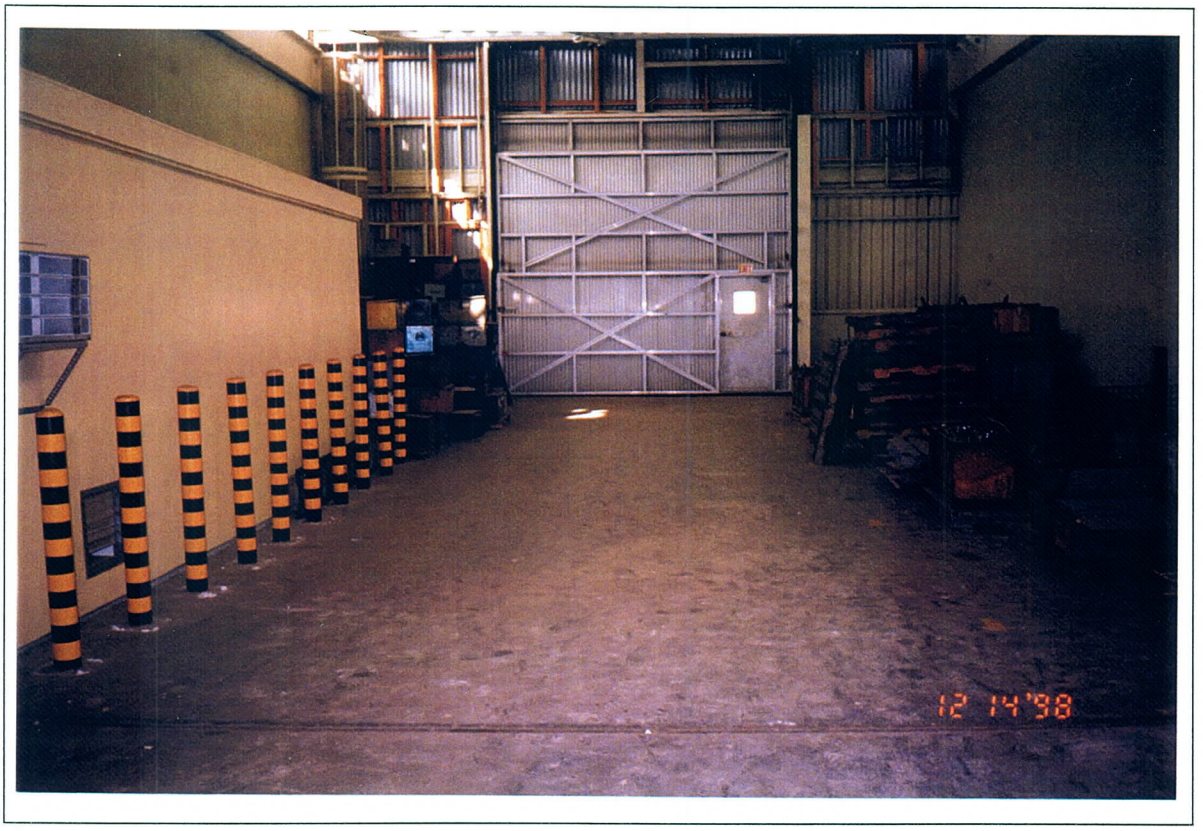
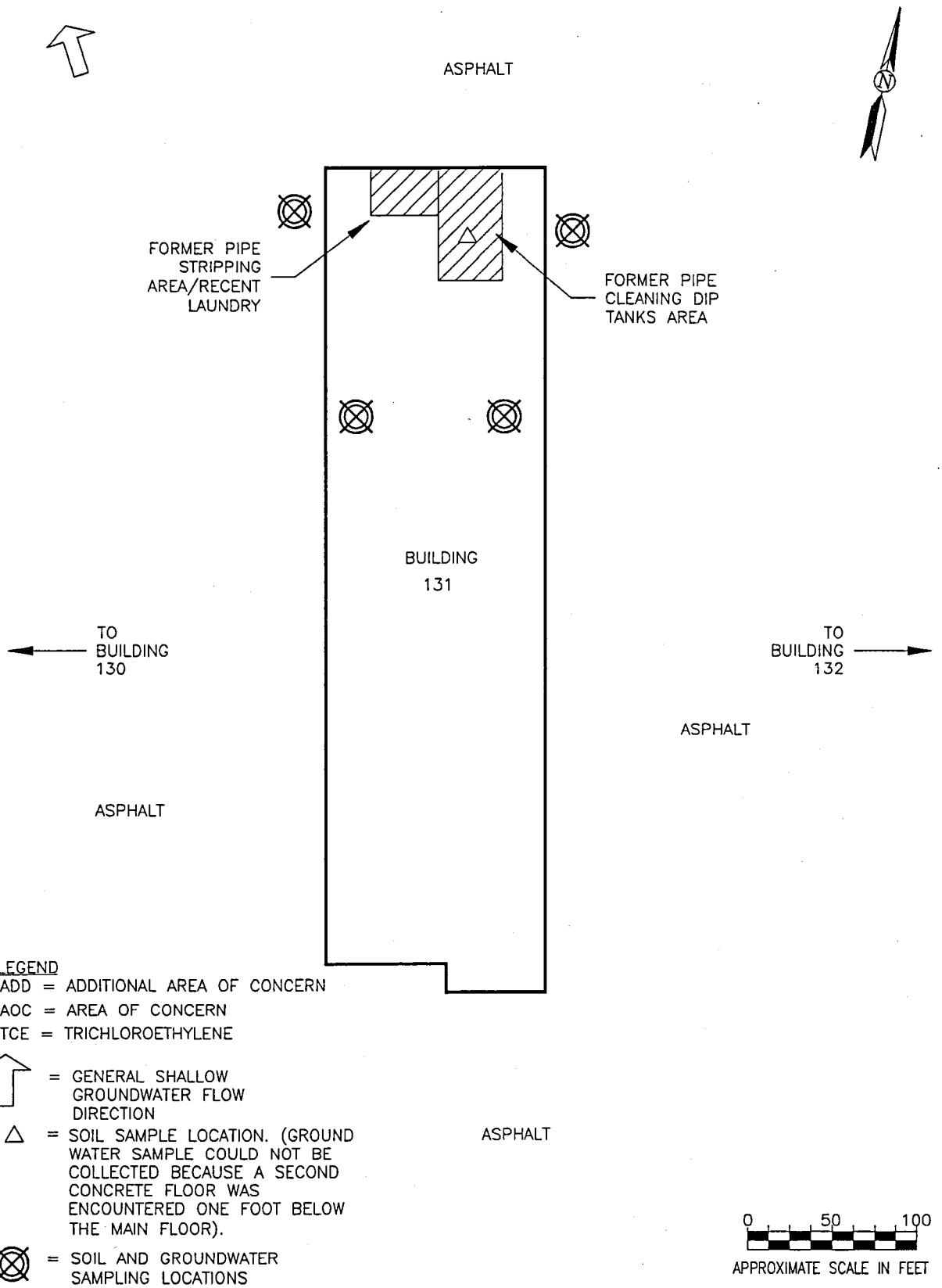


Figure 4.187-2 Former Process Tank Area (AOC ADD 5), Building 131 Facing North 12/14/98

Figure 4.187-3 Former Process Tank Area (AOC ADD 5), Building 131 Facing Northeast 12/14/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AOC ADD 5 PROCESS TANKS AT BUILDING 131 GROUP B AREAS OF CONCERN	FIGURE 4.187-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.187-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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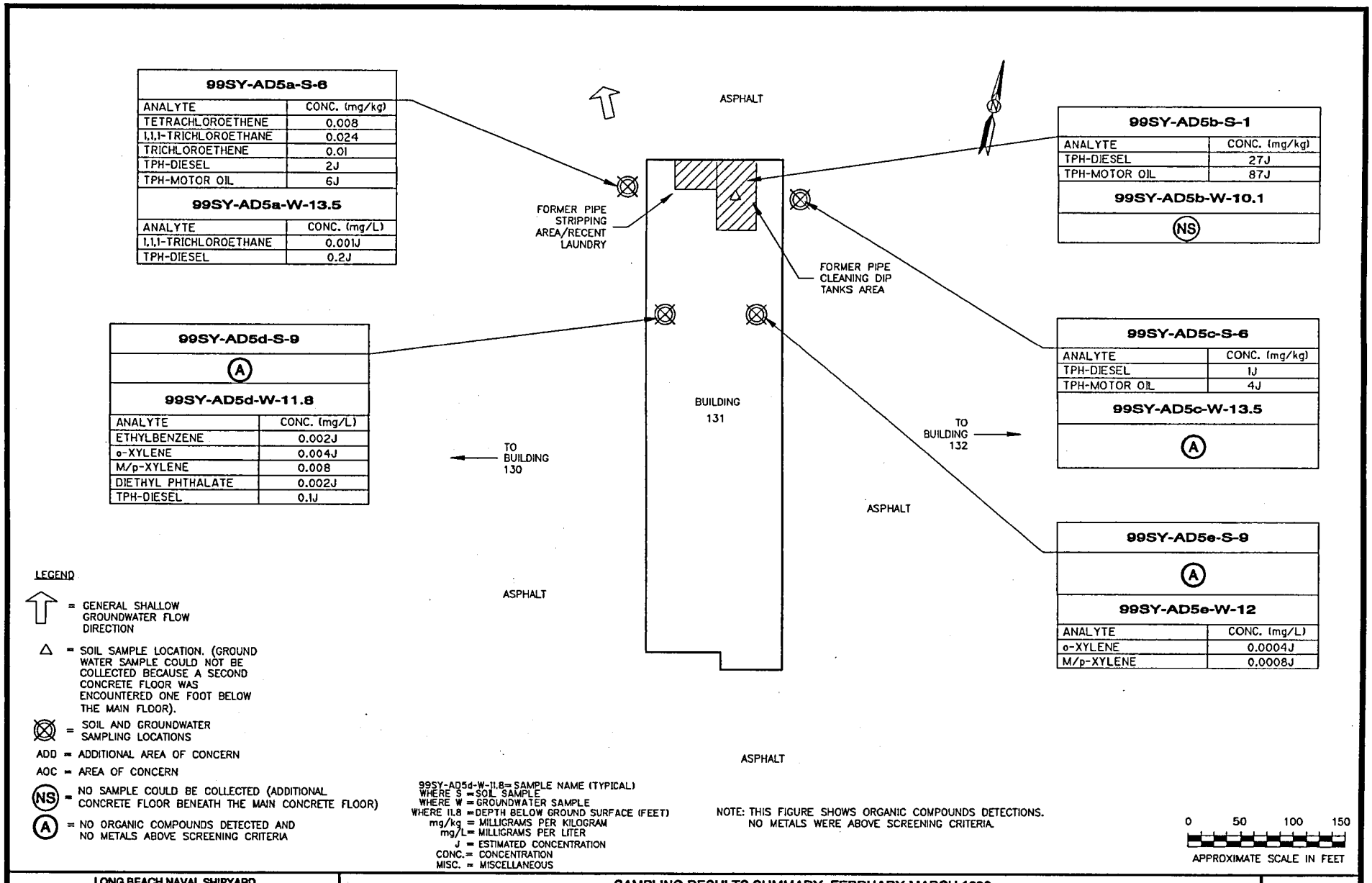

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 7/99
FN: 4.187-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, FEBRUARY-MARCH 1999
AOC ADD 5
PROCESS TANKS AT BUILDING 131
GROUP B AREAS OF CONCERN

FIGURE
4.187-5

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4.187-15

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4.188 FLOOR DRAIN AT BUILDING P-11 (AOC ADD 6)

This section presents a description of the floor drain at Building P-11 (AOC ADD 6), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 6 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 27 October 1998.

4.188.1 Site Description

Table 4.188-1 summarizes the location and characteristics of AOC ADD 6. A site map is provided as Figure 4.188-1. Site photographs are shown in Figures 4.188-2 and 4.188-3.

Table 4.188-1
AOC ADD 6 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 6	Outside the southeastern corner of Building P-11.	H-23	Unidentified drain in the asphalt pavement.	One square drain hole in asphalt pavement.	Drain: approximately one-foot by one-foot by six inches deep.

ADD = Additional AOC = Area of Concern No. = Number

During the 27 October 1998 site walk, a 1-foot by 1-foot drain in the asphalt pavement was observed outside the southeastern corner of Building P-11. During the December 1998 site reconnaissance, the AOC location was inspected. The drain was not covered and was filled with soil/sediment. A small amount of standing liquid with a greenish color was observed in the drain. Approximately one foot south of the drain were metal plates covering the ground surface. Two one-inch diameter pipes with faucets (likely for water) were attached to the building above the drain. The function of the metal plates and their association to the drain is unknown.

4.188.2 Operational History and Waste Characteristics

Table 4.188-2 summarizes the operational history and waste characteristics.

Table 4.188-2
AOC ADD 6 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 6	Unknown	Unknown.	Unknown.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

Building P-11 closeout paperwork identified it as a warehouse (LBNSY-ED 1996b). The former use of the drain and where it discharges to are unknown.

4.188.3 Preliminary Assessment Resources

Table 4.188-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.188-3
AOC ADD 6 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Update of Engineering Evaluation	1988	Archiplan	Part of LBNSY building inspection, but Building P-11 could not be located.
Closure Documentation	1996	LBNSY-ED	Identified Building P-11 as a warehouse.
Personnel Interview	1998	Johnson, LBNSY	General information. No known wastes disposed at this location.

ADD = Additional AOC = Area of Concern LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.188.4 PA Recommendations

Based on PA findings, further action was recommended for AOC ADD 6 because little information was known about past operations. One soil and one groundwater sample were recommended for collection and analysis (CDM Federal 1999).

4.188.5 Number of Samples and Analyses

One soil, one groundwater, one sludge, and one liquid sample were collected from AOC ADD 6 by URSGWC for the Port of Long Beach to expedite property reuse. The Port of Long Beach took responsibility of this investigation and performed this work with regulatory agency approval.

The samples were collected on 6 January 1999 and the sampling results were presented in a letter report addressed to the regulatory agencies on 23 February 1999. The report, *Site*

Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard, was issued by the Port of Long Beach on 23 February 1999 (see Appendix P). The soil sample was collected at a depth of approximately 3 to 5 feet bgs and the groundwater sample was collected at approximately 11 to 15 feet bgs. Two additional samples were collected because liquid and sludge were located in the drain on 6 January 1999. The sludge sample and the liquid sample were collected directly from the drain. The samples were analyzed for the analytical categories indicated in Table 4.188-4. The sampling location and results are summarized in Figure 4.188-4.

Table 4.188-4
AOC ADD 6 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	PCBs	TPH-Gasoline	TPH-Diesel	Oil & Grease[a]	pH
Soil	1	1	1	1	1	1	1	0
Groundwater	1	1	1	1	1	1	1	0
Sludge	0	1	1	0	0	0	0	1
Liquid	0	1	1	0	0	0	0	1

Notes:

(a) By United States Environmental Protection Agency Method 413.1.

ADD = Additional AOC
AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.188.6 Analytical Results

Analytical results are discussed below for the soil, groundwater, sludge, and liquid samples. Sampling and laboratory analyses were performed by the Port of Long Beach and their contractors. Sampling results are presented in Appendix P and summarized in Figure 4.188-4.

4.188.6.1 Soil

No organic compounds were detected in the soil sample, while 12 of the 17 metals were detected, as indicated in Tables 4.188-5 and 4.188-6, respectively.

4.188.6.2 Groundwater

No organic compounds were detected in the groundwater sample with the exception of oil and grease at 4 mg/L and MTBE at 0.0018 mg/L. Seven of the 17 metals were detected in the groundwater sample, as indicated in Tables 4.188-7 and 4.188-8, respectively.

4.188.6.3 Sludge

One organic compound, BEHP, was detected in the sludge sample at a concentration of 4.7 mg/kg, as indicated in Table 4.188-9. Fifteen of the 17 metals were detected in the sludge sample, while the measured pH was 7.67, as indicated in Table 4.188-10.

Because of elevated levels of certain metals in the sludge sample, the Waste Extraction Test (WET) was subsequently performed and analytical results were reported for cadmium, chromium, and lead. The results showed 0.81 mg/L cadmium and 6.39 mg/L lead; chromium was not detected.

4.188.6.4 Liquid

No SVOCs were detected in the liquid sample, as indicated in Table 4.188-11. The pH was 6.02 and 14 of the 17 metals were detected in the liquid sample, as indicated in Table 4.188-12.

4.188.7 Data Comparison to Screening Criteria

Soil: Metals were detected in the soil sample at concentrations below the background concentrations (background concentration calculations excluded contaminated soils). Selenium at 1.44 mg/kg exceeded the LBNSY background level of 1.4 mg/kg, but did not exceed the Naval Station background level of 1.87 mg/kg (URSGWC 1999).

Groundwater: Arsenic was detected in the groundwater sample at a concentration of 0.021 mg/L, below the LBNSY background value of 0.0276 mg/L, but above the Naval Station background level of 0.01845 mg/L) (background concentration calculations excluded contaminated groundwater).

Sludge: No metals results exceeded hazardous waste screening criteria; however, cadmium, chromium, and lead were detected in the sludge sample at concentrations exceeding ten times their respective soluble threshold limit concentration (STLC) levels. After samples were analyzed using the WET, cadmium and chromium were below their respective STLC levels, while lead was detected at 6.39 mg/L, which is above the STLC level of 5 mg/L.

Liquid: The liquid sample collected from the drain contained cadmium and copper slightly above STLC levels.

4.188.8 Data Validation and Usability

Data were not validated following U.S. EPA functional guidelines, but a data quality review was performed by comparing laboratory quality control results to established acceptance criteria for precision, accuracy, representativeness, comparability, and completeness

(URSGWC 1999). According to the review, data were acceptable without qualification. No VOCs were reported in the equipment blank sample.

4.188.9 Recommendations

The Port of Long Beach report dated 23 February 1999 concluded that the sludge and liquid contained in the sump should be removed and disposed of in accordance with local, state, and federal regulations (URSGWC 1999). The sludge and liquid was reportedly removed by POLB in early 1999. No further action is recommended for the soil and groundwater. Deconstruction of Building P-11 and its associated drain occurred in early 1999.

Table 4.188-5
AOC ADD 6 Sampling Results Summary for Organic Compounds (Soil)
Port of Long Beach January 1999

SOIL					
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRGs[a]**	**No. of Detections above Criteria**
VOCs (60 analytes)	1	0	ND	NA	0
SVOCs (64 analytes)	1	0	ND	NA	0
PCBs	1	0	ND	NA	0
TPH-Gasoline	1	0	ND	NA	0
TPH-Diesel	1	0	ND	NA	0
Oil & Grease	1	0	ND	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) From U.S.EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.

ADD = Additional
AOC = Area of Concern
CFR = Code of Federal Regulations
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
TSCA = Toxic Substances Control Act
VOCs = Volatile Organic Compounds

Table 4.188-6
AOC ADD 6 Sampling Results Summary for Metals (Soil)
Port of Long Beach January 1999

SOIL							
Analytical Parameter	No. of Samples	No. of Detections	Concentration (mg/kg)	Industrial PRG[a] (mg/kg)	NAVSTA Background Level[b] (mg/kg)	LBNSY Background Level[b] (mg/kg)	No. of Detections above Criteria
Antimony	1	1	1.10	750	9.66	11.3	0
Arsenic	1	1	4.59	3.0	7.41	17.5	0
Barium	1	1	74.8	100,000	234.54	275	0
Beryllium	1	0	ND	3,400	1.26	1.4	0
Cadmium	1	0	ND	930	1.66	1.7	0
Chromium	1	1	12.9	450	60.59	60.9	0
Cobalt	1	1	6.93	29,000	12.25	24.5	0
Copper	1	1	8.91	70,000	639.94	798.7	0
Lead	1	1	1.89	1000	233.58	185.2	0
Mercury	1	0	ND	560	1.61	2.5	0
Molybdenum	1	1	0.30	9,400	NA	NA	0
Nickel	1	1	10.1	37,000	33.22	32.6	0
Selenium	1	1	1.44	9,400	1.87	1.4	0
Silver	1	0	ND	9,400	1.51	1.5	0
Thallium	1	0	ND	150	4.68	4.2	0
Vanadium	1	1	20.6	13,000	50.26	84.9	0
Zinc	1	1	34.7	100,000	693.94	844.9	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) Background levels for LBNSY are listed in Appendix L. Port of Long Beach report (Appendix P) used Naval Station background values.

ADD = Additional
AOC = Area of Concern
LBNSY = Long Beach Naval Shipyard
mg/kg = Milligrams Per Kilogram
NA = Not Available
NAVSTA = Naval Station
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal

Table 4.188-7
AOC ADD 6 Sampling Results Summary for Organic Compounds (Groundwater)
Port of Long Beach January 1999

GROUNDWATER					
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[a] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]					
MTBE	1	1	0.0018	0.035	0
SVOCs (64 analytes)	1	0	ND	NA	0
PCBs	1	0	ND	NA	0
TPH-Gasoline	1	0	ND	NA	0
TPH-Diesel	1	0	ND	NA	0
Oil & Grease	1	1	4	25	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) If not listed in the table, the remaining analytes were not detected.

ADD = Additional
AOC = Area of Concern
mg/L = Milligrams Per Liter
MTBE = Methyl Tertiary Butyl Ether
NA = Not Available
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Table 4.188-8
AOC ADD 6 Sampling Results Summary for Metals (Groundwater)
Port of Long Beach January 1999

GROUNDWATER							
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**NAVS TA Background Level[a] (mg/L)**	**LBNSY Background Level[a] (mg/L)**	**No. of Detections above Criteria**
Antimony	1	0	ND	1.2	0.06488	0.0616	0
Arsenic	1	1	0.021	0.008	0.01845	0.0276	0
Barium	1	1	0.140	1[c]	0.2227	0.1777	0
Beryllium	1	0	ND	$3.3x10^{-3}$	0.00210	0.002	0
Cadmium	1	0	ND	0.001	0.00216	0.0017	0
Chromium	1	1	0.009	190	0.28315	0.0029	0
Cobalt	1	0	ND	2.2[c]	0.06457	0.0071	0
Copper	1	1	0.015	0.003	0.10733	0.1072	0
Lead	1	0	ND	0.002	0.02232	0.028	0
Mercury	1	0	ND	$4.0x10^{-5}$	0.00062	0.0009	0
Molybdenum	1	1	0.008	0.18[c]	NA	NA	0
Nickel	1	0	ND	0.005	0.12189	0.0958	0
Selenium	1	0	ND	0.015	0.01177	0.040	0
Silver	1	0	ND	0.0007	0.00624	0.0072	0
Thallium	1	0	ND	0.014	0.00334	0.0075	0
Vanadium	1	1	0.007	0.26[c]	0.04005	0.0107	0
Zinc	1	1	0.062	0.020	0.28403	0.291	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) Background levels for LBNSY are listed in Appendix L. Port of Long Beach report (Appendix P) used Naval Station background values.
(b) See Section 3.7 for screening criteria for water.
(c) No Ocean Plan criteria exist. Value presented is for informational purposes only.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal

Table 4.188-9
AOC ADD 6 Sampling Results Summary for Organic Compounds (Sludge)
Port of Long Beach January 1999

SLUDGE						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**US EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
SVOCs (64 analytes)[b]						
Bis (2-ethylhexyl) phthalate (BEHP)	1	1	4.7	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) If not listed in this table, remaining analytes were not detected.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
SVOCs = Semivolatile Organic Compounds

Table 4.188-10
AOC ADD 6 Sampling Results Summary for Metals and pH (Sludge)
Port of Long Beach January 1999

SLUDGE						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**State of California Regulatory Levels[a] (mg/kg)**	**US EPA RCRA Criteria[a] (mg/kg)**	**No. of Detections above Criteria**
Antimony	1	1	22.5	500	NA	0
Arsenic	1	1	5.77	500	100	0
Barium	1	1	139	10,000	2,000	0
Beryllium	1	0	ND	75	NA	0
Cadmium	1	0	12.1 [b]	100	20	0 [b]
Chromium	1	1	157 [c]	2,500	100	0 [c]
Cobalt	1	1	9.65	8,000	NA	0
Copper	1	1	634	2,500	NA	0
Lead	1	1	**292** [d]	1,000	100	**1** [d]
Mercury	1	0	0.40	20	4	0
Molybdenum	1	1	13.1	3,500	NA	0
Nickel	1	1	35.9	2,000	NA	0
Selenium	1	1	7.36	100	20	0
Silver	1	0	0.74	500	100	0
Thallium	1	0	ND	700	NA	0
Vanadium	1	1	11.3	2,400	NA	0
Zinc	1	1	1020	5,000	NA	0
pH	1	1	7.67	2 to 12.5	2 to 12.5	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used.
(b) WET result 0.81 mg/L, STLC criteria 1 mg/L.
(c) WET result nondetect, STLC criteria 5 mg/L.
(d) WET result 6.39 mg/L, STLC criteria 5 mg/L.

Bold indicates that screening criteria were exceeded.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
WET = Waste Extraction Test

Table 4.188-11
AOC ADD 6 Sampling Results Summary for Organic Compounds (Liquid)
Port of Long Beach January 1999

LIQUID						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**State of California Regulatory Levels[a] (mg/L)**	**US EPA RCRA Criteria[a] (mg/L)**	**No. of Detections above Criteria**
SVOCs (64 analytes)[b]	1	0	ND	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) If not listed in this table, remaining analytes were not detected.

ADD = Additional
AOC = Area of Concern
CFR = Code of Federal Regulations
J = Estimated Concentration
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
SVOCs = Semivolatile Organic Compounds

Table 4.188-12
AOC ADD 6 Sampling Results Summary for Metals and pH (Liquid)
Port of Long Beach January 1999

LIQUID						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**State of California Regulatory Levels[a] (mg/L)**	**US EPA RCRA Criteria[a] (mg/L)**	**No. of Detections above Criteria**
Antimony	1	0	0.054	15	NA	0
Arsenic	1	1	0.028	5	100	0
Barium	1	1	0.381	100	2,000	0
Beryllium	1	0	ND	0.75	NA	0
Cadmium	1	0	**1.03**	1	20	1
Chromium	1	1	0.206	5	100	0
Cobalt	1	0	0.183	80	NA	0
Copper	1	1	**28.3**	25	NA	1
Lead	1	0	1.50	5	100	0
Mercury	1	0	0.0039	0.2	4	0
Molybdenum	1	1	ND	350	NA	0
Nickel	1	0	0.95	20	NA	0
Selenium	1	0	0.016	1	20	0
Silver	1	0	0.079	5	100	0
Thallium	1	0	ND	7	NA	0
Vanadium	1	1	0.035	24	NA	0
Zinc	1	1	40.3	250	NA	0
pH	1	1	6.02	2 to 12.5	2 to 12.5	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria for water.

Bold indicates that screening criteria were exceeded.

AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal

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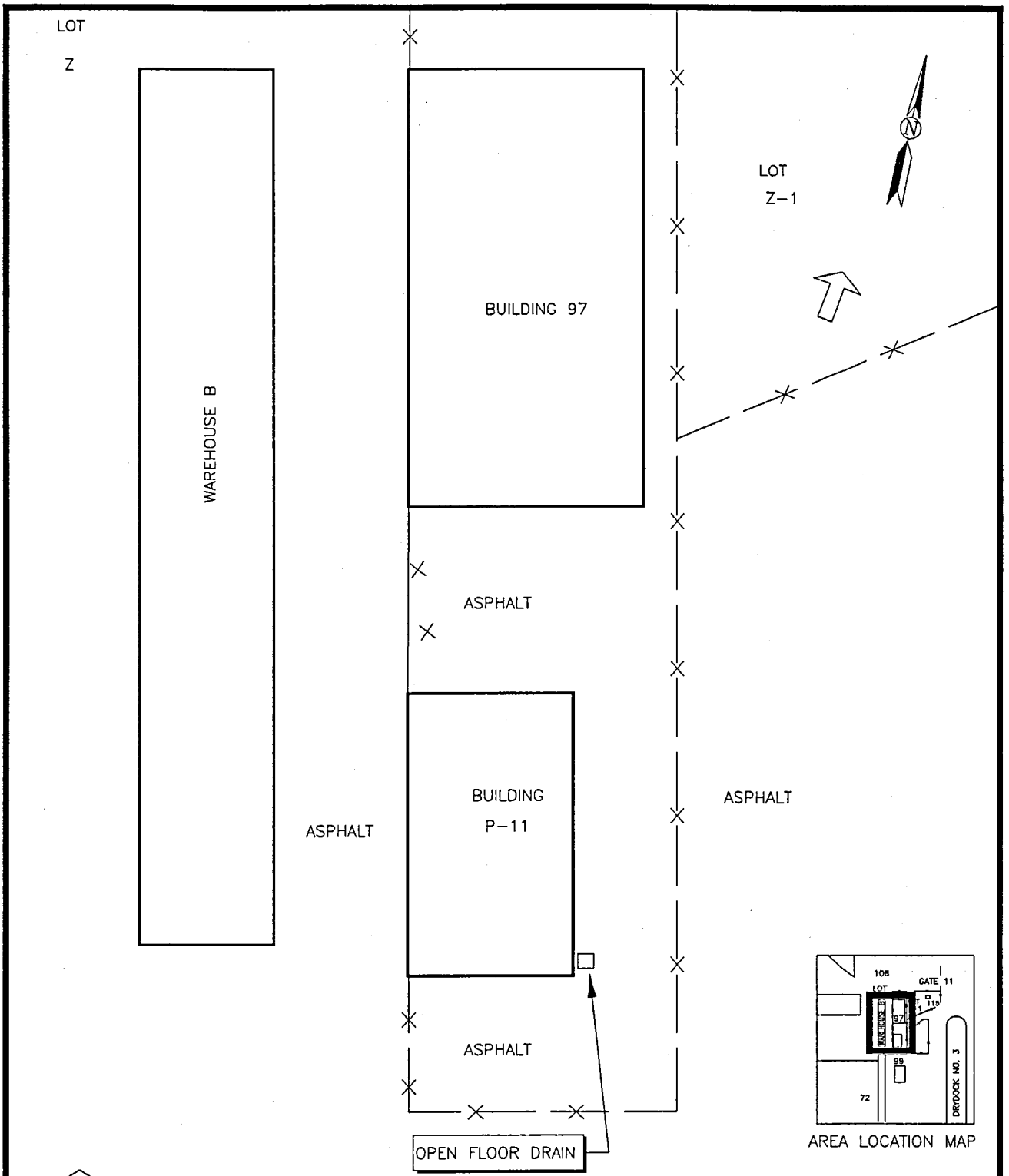

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 6 FLOOR DRAIN AT BUILDING P-11	FIGURE
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 5/99 FN: 4.188-1		4.188-1
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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Figure 4.188-2 Floor Drain at Building P-11 (AOC ADD 6) Facing Down 12/14/98

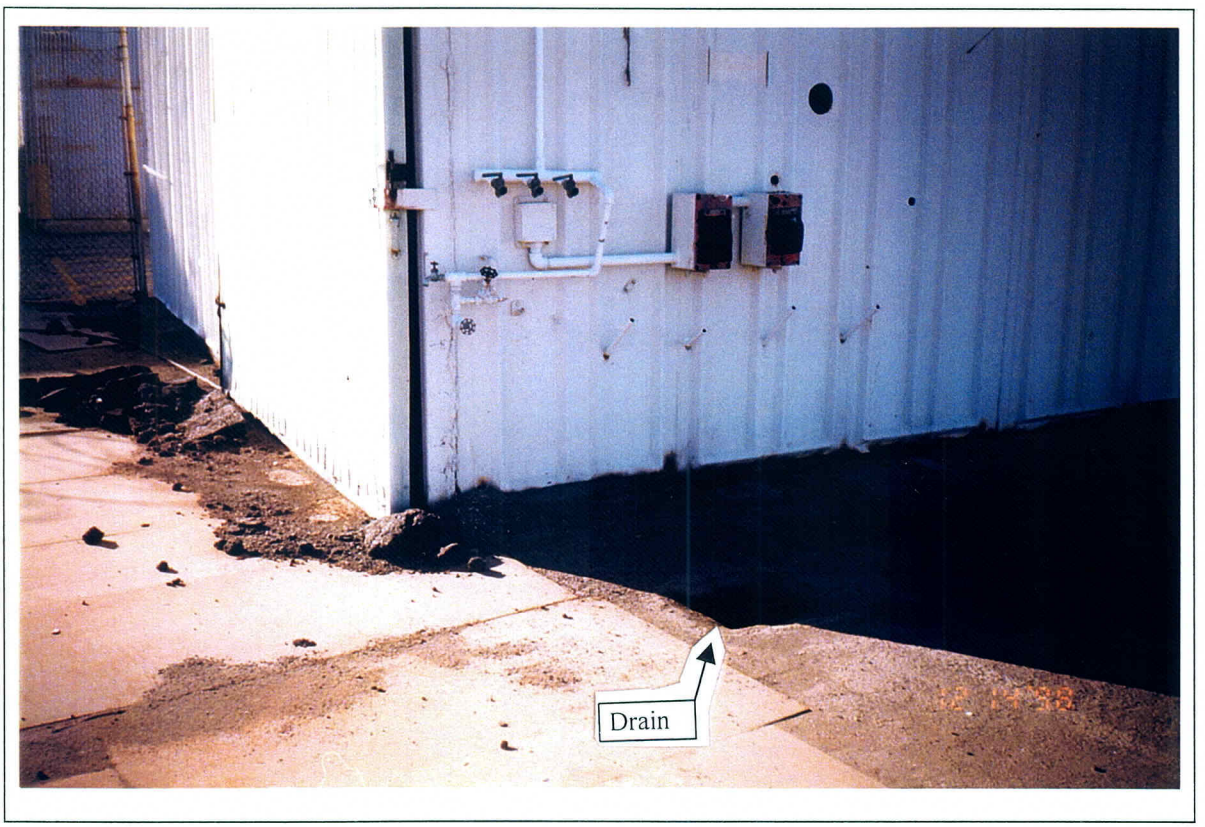
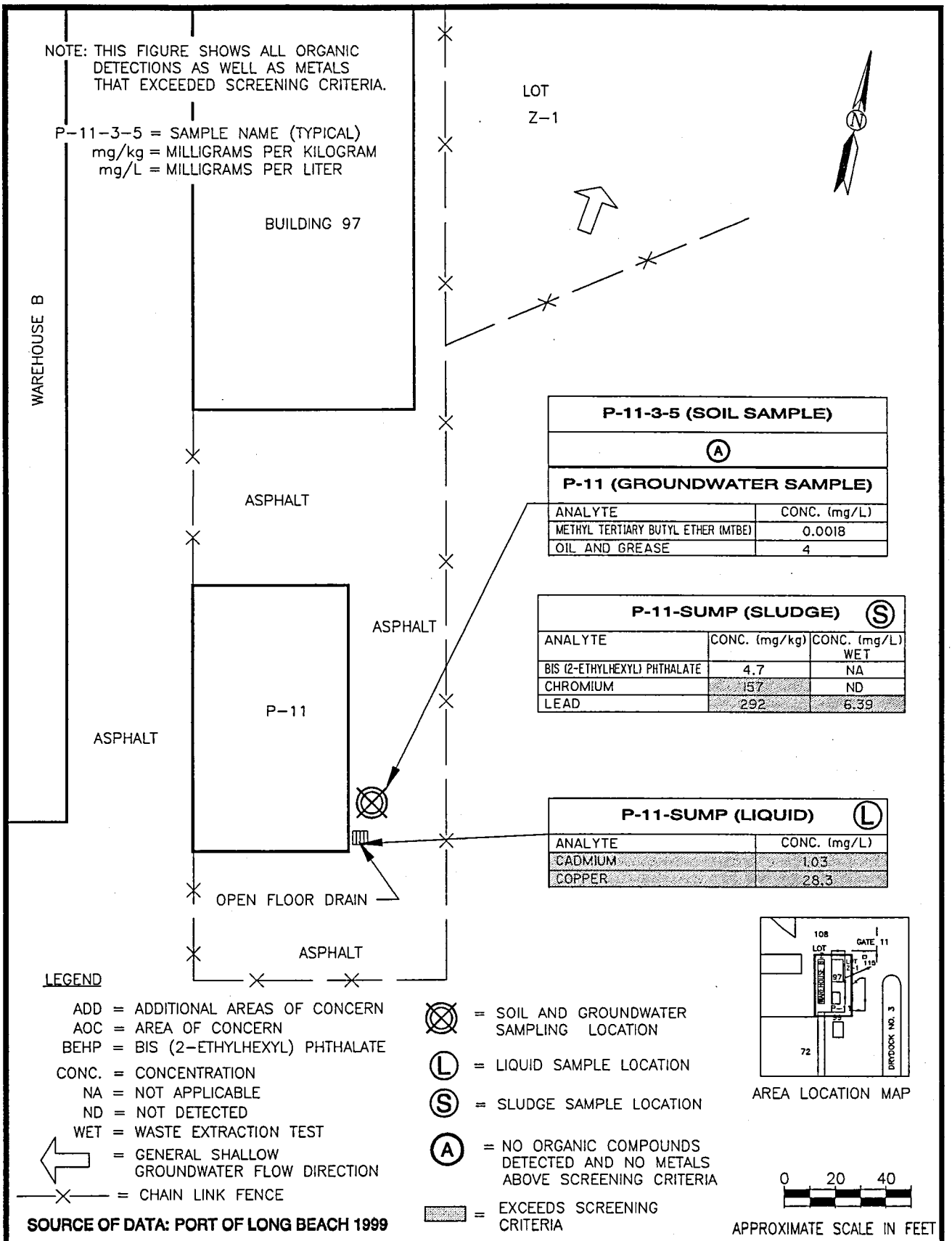


Figure 4.188-3 Building P-11 (AOC ADD 6) Facing West 12/14/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLE LOCATION AND RESULTS SUMMARY, JANUARY 1999 RESULTS SUMMARY AOC ADD 6 FLOOR DRAIN AT BUILDING P-11 GROUP B AREAS OF CONCERN	FIGURE 4.188-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 7/99 FN: 4.188-4	
MODIFIED BY: J. Brown	PROJECT NO. 6210-014	

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4.188-18

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4.189 SUMP AT WAREHOUSE A (AOC ADD 7)

This section presents a description of the Sump at Warehouse A (AOC ADD 7), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 7 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.189.1 Site Description

Table 4.189-1 summarizes the location and characteristics of AOC ADD 7. A site map is provided as Figure 4.189-1. Site photographs are shown in Figures 4.189-2 and 4.189-3.

Table 4.189-1
AOC ADD 7 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 7	Inside the southeastern portion of Warehouse A	J-23	Floor sump covered by a metal grate with 1-inch diameter holes.	Floor sump.	Approximately 3 feet wide by 10 feet long by 2 feet deep.

ADD = Additional AOC = Area of Concern No. = Number

During the December 1998 site reconnaissance, the AOC was inspected. A 3-foot wide by 10-foot long by 2-foot deep sump was identified inside the southeastern portion of Warehouse A during the 27 October 1998 site walk. The sump was covered with a metal cover containing 1-inch diameter holes. Its exact use and discharge location are unknown. During a 6 January 1999 investigation of the AOC by the Port of Long Beach, it was determined that the bottom of the sump is connected to a sewer line and contained a small amount of flowing water (less than one inch). AOC ADD 7 is located inside an addition to Warehouse A that was built in 1983 according to the Public Works Property Record (LBNSY-ED 1996d).

4.189.2 Operational History and Waste Characteristics

Table 4.189-2 summarizes the operational history and waste characteristics.

Table 4.189-2
AOC ADD 7 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 7	Unknown	Paint stripping operation.	Discharges of moderately alkaline solutions, chlorinated solvents, phenols, sodium chromate, and wetting agents.	Operations discharged approximately 385 gallons per month.

Source: Industrial Waste Study, Brown and Caldwell 1969
ADD = Additional AOC = Area of Concern No. = Number

The exact use of the sump is unknown. According to the 1969 Brown and Caldwell Industrial Waste Study for LBNSY, a metal parts cleaning operation was located outside the southeastern corner of Warehouse A near the sump. Three metal aboveground tanks, used for paint stripping, were used as part of the operation. These tanks discharged approximately 385 gallons per month to a 15-inch storm drain. No ASTs were observed during the December 1998 site reconnaissance and it is unknown when these tanks were removed. The 1969 IWS suggested alterations that would result in discharging to the sanitary sewer rather than the storm drain system. Discharges contained moderately alkaline solutions, chlorinated solvents, phenols, sodium chromate, and wetting agents.

It is possible that the sump was used in association with steam cleaning activities outside the Building 109 directly south of the sump.

4.189.3 Preliminary Assessment Resources

Table 4.189-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.189-3
AOC ADD 7 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Industrial Waste Study	1969	Brown and Caldwell	Warehouse A metal cleaning operations.
EBS, Public Property Records	1996	LBNSY-ED	General Warehouse A information.
Personnel Interview	1998	Johnson, LBNSY	General Warehouse A information.

ADD = Additional
AOC = Area of Concern
EBS = Environmental Baseline Survey
LBNSY = Long Beach Naval Shipyard
LBNSY-ED = Long Beach Naval Shipyard, Environmental Division

4.189.4 PA Recommendations

Further action was recommended for AOC ADD 7 because past metal cleaning operations that used solvents and other hazardous materials may have been associated with the sump. One soil and one groundwater sample were recommended for collection and analysis for potential contaminants of concern.

4.189.5 Number of Samples and Analyses

One soil and one groundwater sample were collected from AOC ADD 7 by URSGWC for the Port of Long Beach to expedite property reuse. The Port of Long Beach took responsibility of this investigation and performed this work with regulatory agency approval.

The samples were collected on 6 January 1999 and the sampling results were presented in a letter report. The report, *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, was issued by the Port of Long Beach on 23 February 1999 (see Appendix P). One soil and one groundwater sample were collected immediately adjacent to the sump (rather than beneath the sump) because it was observed that the sump was connected to the sewer system. The soil sample was collected at a depth of 5 feet bgs (equal to the bottom of the sump) and the groundwater sample was collected at approximately 10 feet bgs. The samples were analyzed for the analytical categories indicated in Table 4.189-4. The sampling location and results are shown in Figure 4.189-4.

Table 4.189-4
AOC ADD 7 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	CN	TPH-Gasoline	TPH-Diesel	Oil & Grease[(a)]	pH
Soil	1	1	1	1	1	1	1	1
Groundwater	1	1	1	1	1	1	1	1

Notes:

(a) United States Environmental Protection Agency Method 413.1.

ADD = Additional AOC
AOC = Area of Concern
CN = Cyanide
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.189.6 Analytical Results

Analytical results are discussed below for the soil and groundwater samples. Sampling and laboratory analyses were performed by the Port of Long Beach and their contractors. Organic compound results are shown in Table 4.189-5, while metals, cyanide, and pH results are shown in Table 4.189-6. Sampling results are presented in Appendix P and summarized in Figure 4.189-4.

4.189.6.1 Soil

No organic compounds were detected in the soil sample. Eleven of the 17 metals analyzed were detected, while the pH result was 6.07.

4.189.6.2 Groundwater

No organic compounds were detected in the groundwater sample with the exception of oil and grease at 12 mg/L. Seven of the 17 metals analyzed were detected in groundwater. The pH result was 7.80.

4.189.7 Data Comparison to Screening Criteria

No analytes were detected in the soil sample above established levels of screening criteria. Selenium was detected in the soil at a concentration of 1.41 mg/kg, which slightly exceeded the LBNSY background level of 1.4 mg/kg, but did not exceed the Naval Station background value of 1.87 mg/kg (background concentration calculations excluded contaminated soils).

In the groundwater sample, arsenic exceeded the Ocean Plan criteria and NAVSTA background level, but not the LBNSY background level (background concentration calculations excluded contaminated groundwater).

4.189.8 Data Validation and Usability

Data were not validated following U.S. EPA functional guidelines, but a data quality review was performed by comparing laboratory quality control results to established acceptance criteria for precision, accuracy, representativeness, comparability, and completeness (URSGWC 1999). According to the review, data were acceptable without qualification. No VOCs were reported in the equipment blank sample.

4.189.9 Recommendations

The Port of Long Beach report dated 23 February 1999 concluded that no further action is recommended for the Sump at Warehouse A (AOC ADD 7) because soil and groundwater samples were collected but analytes did not exceed their respective screening criteria (URSGWC 1999). Deconstruction of Warehouse A and its associated sump occurred in early 1999.

Table 4.189-5
AOC ADD 7 Sampling Results Summary for Organics (Soil)
Port of Long Beach January 1999

SOIL					
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**
VOCs (60 analytes)[b]	1	0	ND	NA	0
SVOCs (64 analytes)[b]	1	0	ND	NA	0
PCBs	1	0	ND	NA	0
TPH-Gasoline	1	0	ND	NA	0
TPH-Diesel	1	0	ND	NA	0
Oil and Grease	1	0	ND	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) If not listed in this table, analytes were not detected.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
PCBs = Polychlorinated Biphenyls
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Table 4.189-6
AOC ADD 7 Sampling Results Summary for Inorganic Compounds (Soil)
Port of Long Beach January 1999

SOIL							
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**NAVSTA Background Level[b] (mg/kg)**	**LBNSY Background Level[b] (mg/kg)**	**No. of Detections above Criteria**
Antimony	1	1	1.06	750	9.66	11.3	0
Arsenic	1	1	1.75	3.0	7.41	17.5	0
Barium	1	1	78.8	100,000	234.54	275	0
Beryllium	1	0	ND	3,400	1.26	1.4	0
Cadmium	1	0	ND	930	1.66	1.7	0
Chromium	1	1	14.9	450	60.59	60.9	0
Cobalt	1	1	8.04	29,000	12.25	24.5	0
Copper	1	1	11.9	70,000	639.94	798.7	0
Lead	1	1	2.20	1000	233.58	185.2	0
Mercury	1	0	ND	560	1.61	2.5	0
Molybdenum	1	0	ND	9,400	NA	NA	0
Nickel	1	1	11.7	37,000	33.22	32.6	0
Selenium	1	1	1.41	9,400	1.87	1.4	0
Silver	1	0	ND	9,400	1.51	1.5	0
Thallium	1	0	ND	150	4.68	4.2	0
Vanadium	1	1	24.4	13,000	50.26	84.9	0
Zinc	1	1	40.8	100,000	693.94	844.9	0
Cyanide	1	0	ND	NA	NA	NA	0
pH	1	1	6.07	NA	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.
(b) Background levels for LBNSY are listed in Appendix L. Port of Long Beach report (Appendix P) used Naval Station background values.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal

Table 4.189-7
AOC ADD 7 Sampling Results Summary for Organics (Groundwater)
Port of Long Beach January 1999

GROUNDWATER					
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Screening Criteria for Water[a] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)	1	0	ND	NA	0
SVOCs (64 analytes)	1	0	ND	NA	0
TPH-Gasoline	1	0	ND	NA	0
TPH-Diesel	1	0	ND	NA	0
Oil & Grease	1	1	12	25	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) See Section 3.7 for screening criteria.

ADD = Additional
AOC = Area of Concern
CFR = Code of Federal Regulations
mg/L = Milligrams Per Liter
MISC = Miscellaneous
NA = Not Available
ND = Not Detected
No. = Number
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Table 4.189-8
AOC ADD 7 Sampling Results Summary for Inorganic Compounds (Groundwater)
Port of Long Beach January 1999

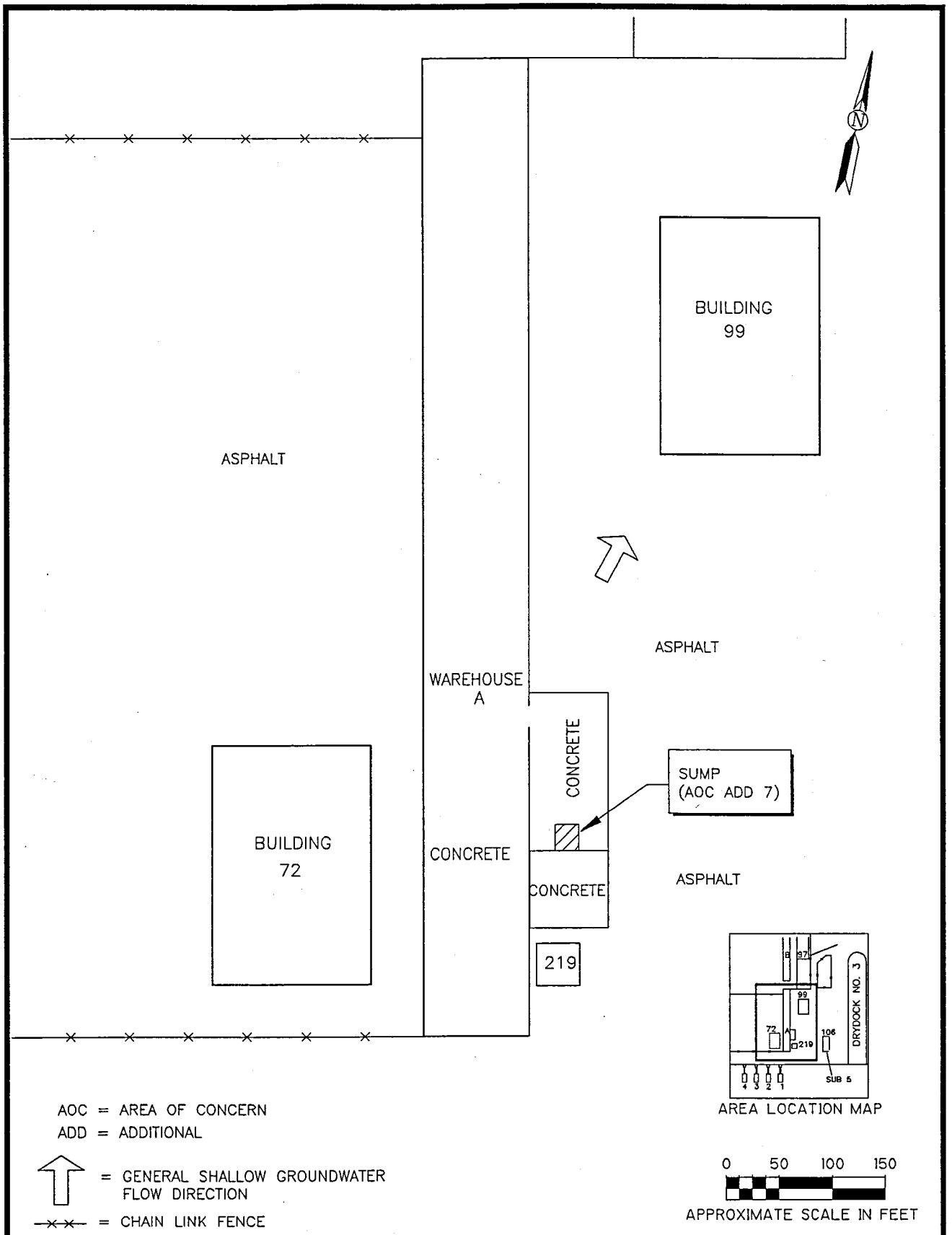
GROUNDWATER							
Analytical Parameter	No. of Samples	No. of Detections	Dissolved Concentration (mg/L)	Screening Criteria for Water[b] (mg/L)	NAVS TA Background Level[a] (mg/L)	LBNSY Background Level[a] (mg/L)	No. of Detections above Criteria
Antimony	1	0	ND	1.2	0.06488	0.0616	0
Arsenic	1	1	0.023	0.008	0.01845	0.0276	0
Barium	1	1	0.144	1[c]	0.2227	0.1777	0
Beryllium	1	0	ND	$3.3x10^{-5}$	0.00210	0.002	0
Cadmium	1	0	ND	0.001	0.00216	0.0017	0
Chromium	1	1	0.010	190	0.28315	0.0029	0
Cobalt	1	0	ND	2.2[c]	0.06457	0.0071	0
Copper	1	1	0.020	0.003	0.10733	0.1072	0
Lead	1	0	ND	0.002	0.02232	0.028	0
Mercury	1	0	ND	$4.0x10^{-5}$	0.00062	0.0009	0
Molybdenum	1	1	0.010	0.18[c]	NA	NA	0
Nickel	1	0	ND	0.005	0.12189	0.0958	0
Selenium	1	0	ND	0.015	0.01177	0.040	0
Silver	1	0	ND	0.0007	0.00624	0.0072	0
Thallium	1	0	ND	0.014	0.00334	0.0075	0
Vanadium	1	1	0.012	0.26[c]	0.04005	0.0107	0
Zinc	1	1	0.033	0.020	0.28403	0.291	0
Cyanide	1	0	ND	NA	NA	NA	0
pH	1	1	7.80	6.0 to 9.0	NA	NA	0

Source: *Site Investigation Results Warehouse A, Building P-11, and Building 50 Former Long Beach Naval Shipyard*, Port of Long Beach, dated 23 February 1999 (URS Greiner Woodward Clyde 1999) (see Appendix P).

Notes:

(a) Background levels for LBNSY are listed in Appendix L. Port of Long Beach report (Appendix P) used Naval Station background values.
(b) See Section 3.7 for screening criteria for water.
(c) No Ocean Plan criteria exist. Value presented is for informational purposes only.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 7 SUMP AT WAREHOUSE A	FIGURE 4.189-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/98 FN: 4.189-1	
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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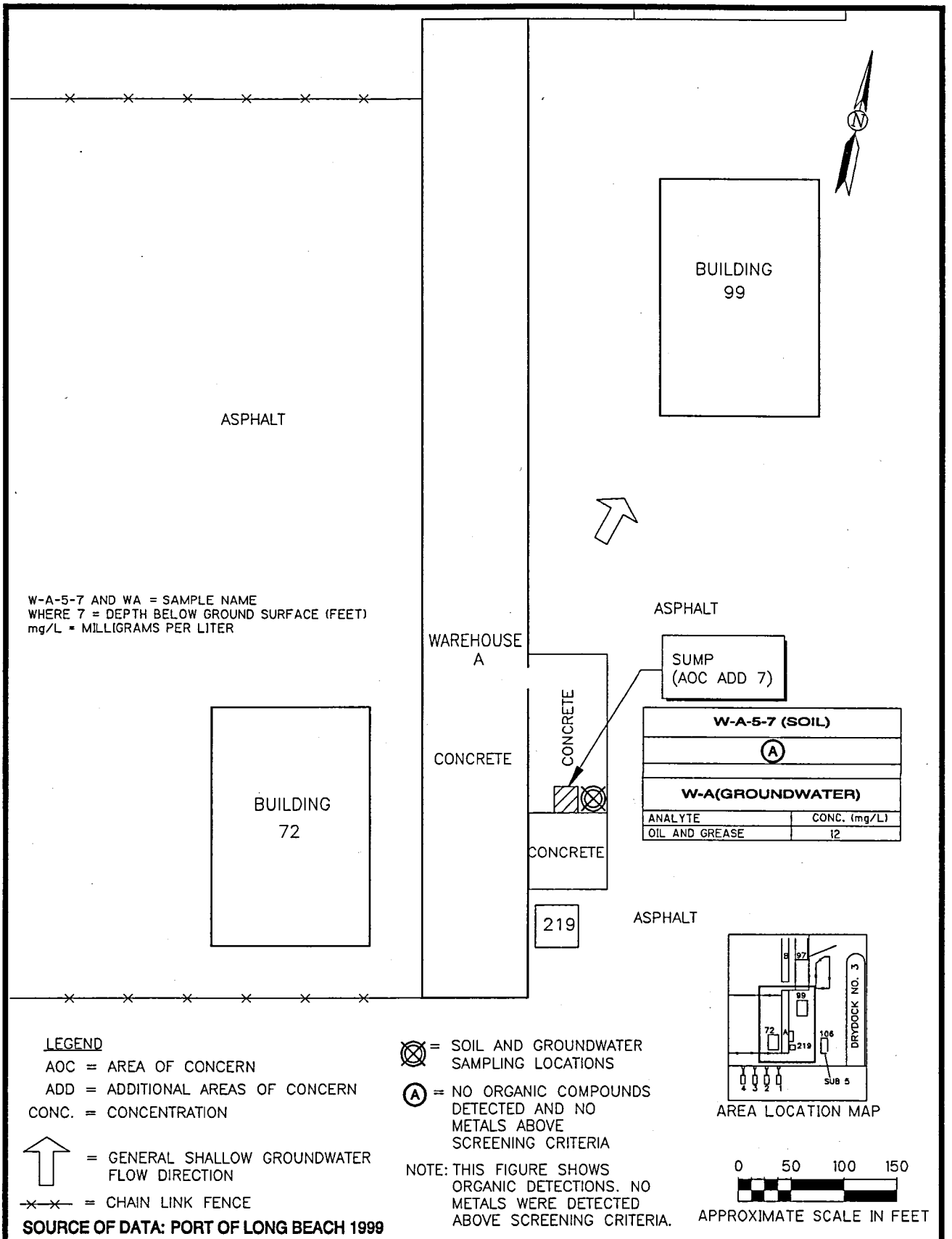
Figure 4.189-2 Outside Warehouse A (AOC ADD 7) Facing North 12/14/98

Figure 4.189-3 Miscellaneous Floor Drain (AOC ADD 7), Warehouse A Facing South 12/14/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATION AND RESULTS SUMMARY, JANUARY 1999 AOC ADD 7 SUMP AT WAREHOUSE A GROUP B AREAS OF CONCERN	FIGURE 4.189-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 7/99 FN: 4.189-4 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.190 STORAGE AREA AT TEMPORARY BUILDING 2 (AOC ADD 8)

This section presents a description of the Storage Area at Temporary Building 2 (AOC ADD 8), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 8 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.190.1 Site Description

Table 4.190-1 summarizes the location and characteristics of AOC ADD 8. A site map is provided as Figure 4.190-1. Site photographs are shown in Figures 4.190-2 and 4.190-3.

Table 4.190-1
AOC ADD 8 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 8	Temporary Building 2 (south of Building 311)	F-24	Temporary building used for storage of unknown materials.	Temporary building with an asphalt floor and a storm drain catch basin inside.	40 feet long by 20 feet wide.

ADD = Additional AOC = Area of Concern No. = Number

During the 27 October 1998 site walk, four temporary storage buildings were observed south of Building 311 and north of Sullivan Street. During the December 1998 site reconnaissance, AOC ADD 8 was inspected. Temporary Building 2 had an asphalt floor and a grated storm drain catch basin located inside. Minor surface staining was observed on the asphalt floor.

4.190.2 Operational History and Waste Characteristics

Table 4.190-2 summarizes the operational history and waste characteristics.

Table 4.190-2
AOC ADD 8 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 8	Unknown	Storage activities of unknown materials.	Unknown.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

The materials stored in Temporary Building 2 are unknown. During the December 1998 site reconnaissance, no evidence of past storage activities was found.

4.190.3 Preliminary Assessment Resources

Table 4.190-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.190-3
AOC ADD 8 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Personnel Interview	1998	Johnson, LBNSY	Did not know what types of materials were stored in the temporary buildings south of Building 311.

ADD = Additional AOC = Area of Concern LBNSY = Long Beach Naval Shipyard

4.190.4 PA Recommendations

Further action was recommended for AOC ADD 8 because the types and quantities of materials stored in Temporary Building 2 are unknown and a storm drain catch basin, to which wastes may have entered, is located in the building. One soil and one groundwater sample were recommended for collection and analysis for potential contaminants of concern.

4.190.5 Number of Samples and Analyses

As described in Work Plan Addendum Number 2 (CDM Federal 1999), one soil and one groundwater sample were collected at AOC ADD 8. The samples were collected inside Temporary Building 2 on 26 February 1999 and subsequently analyzed for the analytical categories indicated in Table 4.190-4. The sampling location is shown in Figure 4.190-4.

Table 4.190-4
AOC ADD 8 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	PCBs	pH
Soil	1	1	1	1	1	1	1	1
Groundwater	1	1	1	1	1	1	1	1

ADD = Additional AOC
AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.190.6 Analytical Results

Analytical results are discussed below for the soil and groundwater samples. Organic compound sample results are shown in Tables 4.190-5, while metals and pH results are shown in Tables 4.190-6. The sampling results are summarized in Figure 4.190-5.

4.190.6.1 Soil

TPH-diesel, TPH-motor oil, and the PCB Aroclor 1260 were detected in the soil sample as shown in Table 4.160-5. VOCs, SVOCs, and TPH-gasoline were not detected in the soil sample. The pH for the soil sample was measured at 8.14. Twelve of the 17 metals analyzed were detected the soil sample, as indicated in Table 4.67-6.

4.190.6.2 Groundwater

No organic compounds were detected in the groundwater sample. The pH for the groundwater sample was measured at 7.36. Four of the 17 metals analyzed were detected.

4.190.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria.

4.190.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.190.9 Recommendations

No further action is recommended for the Storage Area at Temporary Building 2 because soil and groundwater samples were collected but no analytes exceeded their screening criteria.

Table 4.190-5
AOC ADD 8 Sampling Results Summary for Organic Compounds
February 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]	1	0	ND	N/A	0	1	0	ND	N/A	0
SVOCs (64 analytes)[c]	1	0	ND	N/A	0	1	0	ND	N/A	0
TPH-Gasoline	1	0	ND	1,000[c]	0	1	0	ND	NA	0
TPH-Diesel	1	1	70J	10,000[c]	0	1	0	ND	NA	0
TPH-Motor Oil	1	1	460	50,000[c]	0	1	0	ND	25	0
PCBs										
Aroclor 1260	1	1	0.01J	1.3	0	1	0	ND	1.9×10^{-5}	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.190-6
AOC ADD 8 Sampling Results Summary for Metals and pH
February 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	1	1	0.59	750	11.3	0
Arsenic	1	1	2.1	3.0	17.5	0
Barium	1	1	116	100,000	275	0
Beryllium	1	0	ND	3,400	1.4	0
Cadmium	1	1	0.035	930	1.7	0
Chromium	1	1	18.8	450	60.9	0
Cobalt	1	1	14.6	29,000	24.5	0
Copper	1	1	40.3	70,000	798.7	0
Lead	1	1	13.1	1000	185.2	0
Mercury	1	1	0.69	560	2.5	0
Molybdenum	1	0	ND	9,400	NA	0
Nickel	1	1	27.1	37,000	32.6	0
Selenium	1	0	ND	9,400	1.4	0
Silver	1	0	ND	9,400	1.5	0
Thallium	1	0	ND	150	4.2	0
Vanadium	1	1	29.5	13,000	84.9	0
Zinc	1	1	79.7	100,000	844.9	0
pH	1	1	8.14	NA	NA	0

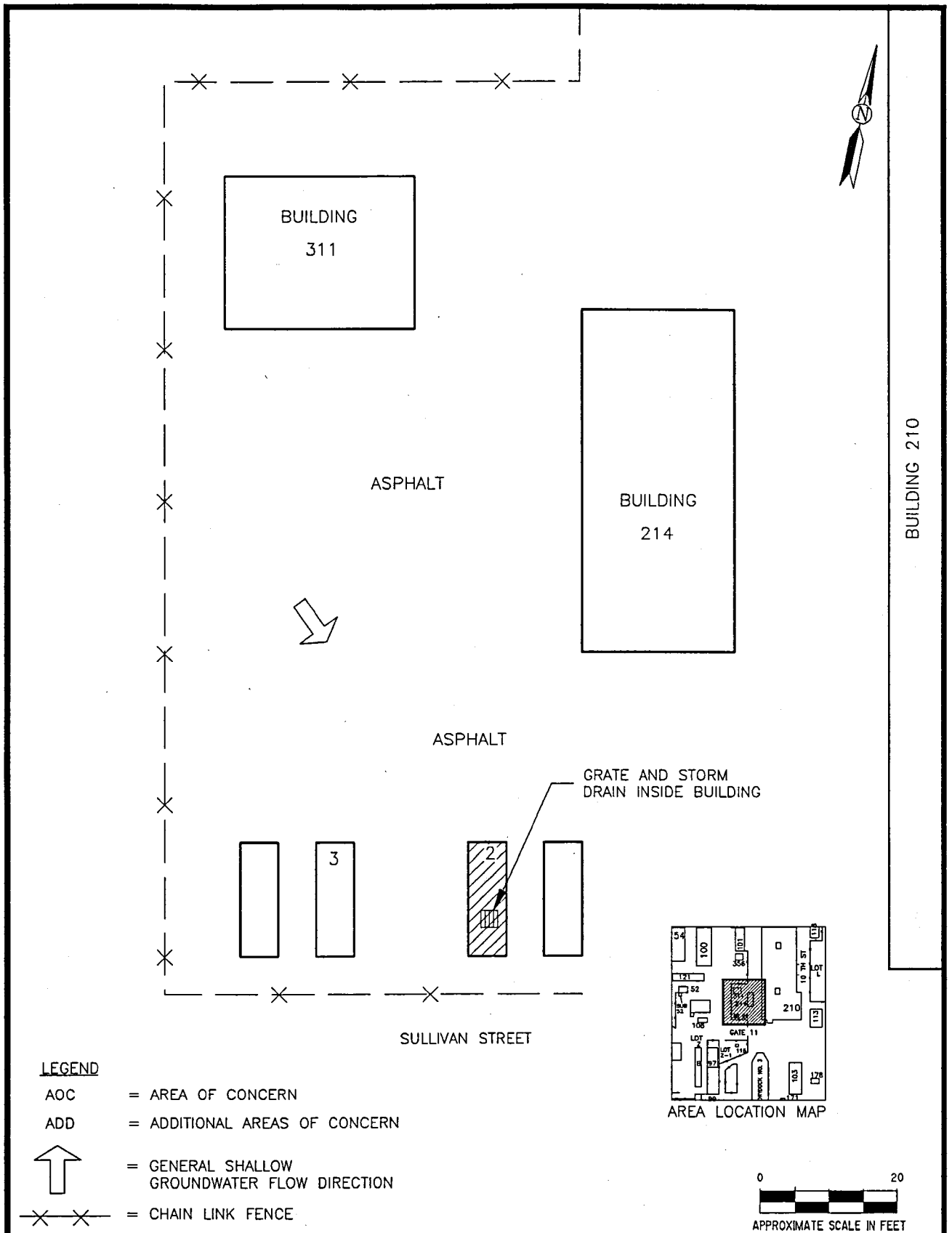
Table 4.190-6 (continued)
AOC ADD 8 Sampling Results Summary for Metals and pH
February 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	1	0	ND	1.2	0.0616	0
Arsenic	1	0	ND	0.008	0.0276	0
Barium	1	1	0.101J	1[d]	0.1777	0
Beryllium	1	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	1	0	ND	0.001	0.0017	0
Chromium	1	0	ND	190	0.0029	0
Cobalt	1	0	ND	2.2[d]	0.0071	0
Copper	1	0	ND	0.003	0.1072	0
Lead	1	0	ND	0.002	0.028	0
Mercury	1	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	1	1	0.0092J	0.18[d]	NA	0
Nickel	1	0	ND	0.005	0.0958	0
Selenium	1	1	0.0031	0.015	0.040	0
Silver	1	0	ND	0.0007	0.0072	0
Thallium	1	0	ND	0.014	0.0075	0
Vanadium	1	1	0.0013J	0.26[d]	0.0107	0
Zinc	1	0	ND	0.020	0.291	0
pH	1	1	7.36	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 8 STORAGE AREA TEMPORARY BUILDING 2	FIGURE 4.190-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.190-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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4.190-7

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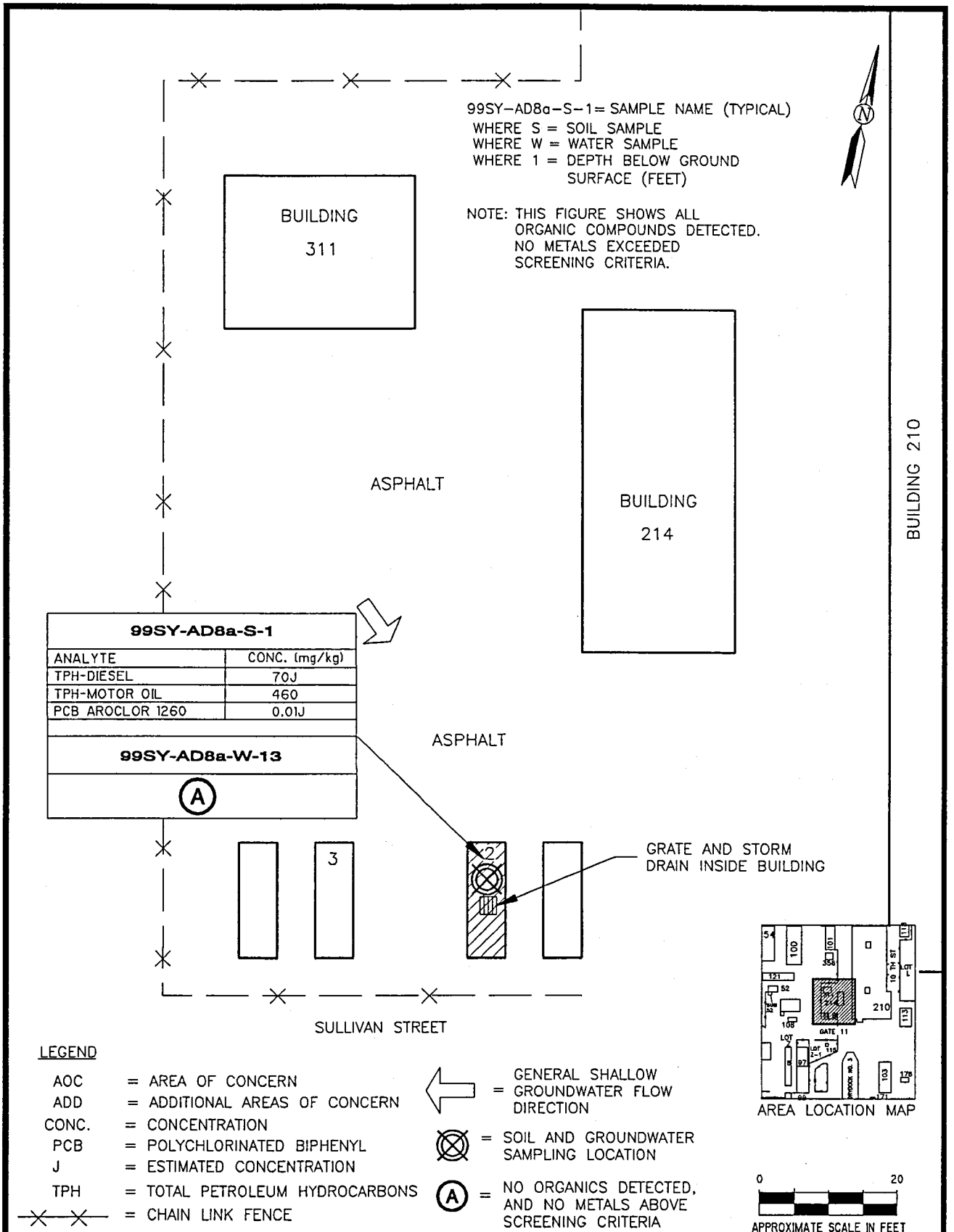
Figure 4.190-2 Temporary Storage Building 2 (AOC ADD 8) Facing Southeast 12/14/98

Figure 4.190-3 Inside Temporary Storage Building 2, Storm Drain to Left of Center (AOC ADD 8), Facing South 12/14/98



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATION AND RESULTS SUMMARY, FEBRUARY 1999 AOC ADD 8 STORAGE AREA TEMPORARY BUILDING 2 GROUP B AREAS OF CONCERN	FIGURE 4.190-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.190-4 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.191 STORAGE AREA AT TEMPORARY BUILDING 3 (AOC ADD 9)

This section presents a description of the Storage Area at Temporary Building 3 (AOC ADD 9), its operational history and waste characteristics, PA resources used, and recommendations. Based on the PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 9 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B in late 1998 based upon site walk observations by regulatory agencies on 27 October 1998.

4.191.1 Site Description

Table 4.191-1 summarizes the location and characteristics of AOC ADD 9. A site map is provided as Figure 4.191-1. Site photographs are shown in Figures 4.191-2 and 4.191-3.

Table 4.191-1
AOC ADD 9 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 9	Temporary Building 3 (south of Building 311)	F-24	Temporary Building used for storage of unknown materials.	Temporary building with an asphalt floor and asphalt curbs segregating the floor into sections.	40 feet long by 20 feet wide.

ADD = Additional AOC = Area of Concern No. = Number

During the 27 October 1998 site walk, four temporary storage buildings were observed south of Building 311 and north of Sullivan Street. During the December 1998 site reconnaissance, Temporary Building 3 was inspected. Temporary Building 3 had an asphalt floor and asphalt curbs segregating the floor into sections. Approximately 20 bags of absorbent material were located inside the entrance of the building.

4.191.2 Operational History and Waste Characteristics

Table 4.191-2 summarizes the operational history and waste characteristics of AOC ADD 9.

Table 4.191-2
AOC ADD 9 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 9	Unknown	Unknown.	Unknown.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

The materials stored in Temporary Building 3 are unknown. During an October 1998 site reconnaissance, no evidence of past storage activities was found except for the bags of absorbent material and the asphalt curbs that suggested segregation of materials.

4.191.3 Preliminary Assessment Resources

Table 4.191-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.191-3
AOC ADD 9 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Personnel Interview	1998	Johnson, LBNSY	Did not know what types of materials were stored in the temporary buildings south of Building 311.

ADD = Additional AOC = Area of Concern LBNSY = Long Beach Naval Shipyard

4.191.4 PA Recommendations

Further action was recommended for AOC ADD 9 because of past storage operations of unknown materials. Two soil and two groundwater samples were recommended for collection and analysis for potential contaminants of concern.

4.191.5 Number of Samples and Analyses

As described in Work Plan Addendum Number 2 (CDM Federal 1999), two soil and two groundwater samples were collected at AOC ADD 9. The samples were collected inside Temporary Building 3 on 26 February 1999 and subsequently analyzed for the analytical categories indicated in Table 4.191-4. Sampling locations are shown in Figure 4.191-4.

Table 4.191-4
AOC ADD 9 Number of Samples and Analyses

Matrix	VOCs	SVOCs	Metals	TPH-Gasoline	TPH-Diesel	TPH-Motor Oil	PCBs	pH
Soil	2	2	2	2	2	2	2	2
Groundwater	2	2	2	2	2	2	2	2

ADD = Additional AOC
AOC = Area of Concern
PCBs = Polychlorinated Biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

4.191.6 Analytical Results

Analytical results are discussed below for the soil and groundwater samples. Organic compound sample results are shown in Table 4.191-5, while metals and pH results are shown in Table 4.191-6. Sampling results are summarized in Figure 4.191-5.

4.191.6.1 Soil

TPH-diesel and TPH-motor oil were detected in the two soil samples as shown in Table 4.191-5. The PCB Aroclor 1260 was detected in sample 99SY-AD5b-S-1 at a concentration of 0.047 mg/kg. No VOCs, SVOCs, or TPH-gasoline were detected in the soil samples. The pH for the soil samples was measured at 8.63 and 8.98.

Twelve of the 17 metals analyzed were detected in one or more of the soil samples, as indicated in Table 4.191-6.

4.191.6.2 Groundwater

The VOC cis-1,2-dichloroethene was detected in both of the groundwater samples, at concentrations of 0.001J and 0.002J mg/L. No SVOCs, TPH-gasoline, TPH-diesel, TPH-motor oil, or PCBs were detected in the groundwater samples. The pH for the two groundwater samples was measured at 7.29 and 7.30. Four of the 17 metals analyzed were detected in one or more of the groundwater samples.

4.191.7 Data Comparison to Screening Criteria

No analytes were detected at concentrations that exceeded their respective screening criteria, and pH values were within the screening criteria range of 6.0 to 9.0 pH units. The cis-1,2-dichloroethene results of 0.001J and 0.002J mg/L were below the screening criteria of 0.006 mg/L.

4.191.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.191.9 Recommendations

No further action is recommended for the Storage Area at Temporary Building 3 because soil and groundwater samples were collected but no analytes exceeded their screening criteria.

Table 4.191-5
AOC ADD 9 Sampling Results Summary for Organic Compounds
February 1999

	SOIL					GROUNDWATER				
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**No. of Samples**	**No. of Detections**	**Concentration (mg/L)**	**Screening Criteria for Water[b] (mg/L)**	**No. of Detections above Criteria**
VOCs (60 analytes)[c]										
Cis-1,2-Dichloroethene	2	0	ND	150	0	2	2	0.001J, 0.002J	0.006[e]	0
SVOCs (64 analytes)[c]	2	0	ND	N/A	0	2	0	ND	N/A	0
TPH-Gasoline	2	0	ND	1,000[d]	0	2	0	ND	N/A	0
TPH-Diesel	2	2	3J, 4J	10,000[d]	0	2	0	ND	N/A	0
TPH-Motor Oil	2	2	20, 44	50,000[d]	0	2	0	ND	25	0
PCBs										
Aroclor 1260	2	1	0.047[f]	1.3	0	2	0	ND	1.9×10^{-8}	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) See Section 3.7 for water screening criteria.
(c) If not listed in this table, the remaining analytes were not detected.
(d) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(e) No Ocean Plan criteria exist. Value presented is for informational purposes only.
(f) Result estimated due to interference by Pesticides and Chlordane.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
SVOCs = Semivolatile Organic Compounds
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.191-6
AOC ADD 9 Sampling Results Summary for Metals
February 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Antimony	2	0	ND	750	11.3	0
Arsenic	2	2	3.5, 3.3	3.0	17.5	0
Barium	2	2	219, 129	100,000	275	0
Beryllium	2	0	ND	3,400	1.4	0
Cadmium	2	1	0.27	930	1.7	0
Chromium	2	2	21.3, 17.1	450	60.9	0
Cobalt	2	2	13.8, 10.1	29,000	24.5	0
Copper	2	2	28.6, 18.3	70,000	798.7	0
Lead	2	2	11.3, 11.4	1000	185.2	0
Mercury	2	2	0.11, 0.084	560	2.5	0
Molybdenum	2	1	0.21J	9,400	NA	0
Nickel	2	2	28.5, 18.1	37,000	32.6	0
Selenium	2	0	ND	9,400	1.4	0
Silver	2	0	ND	9,400	1.5	0
Thallium	2	0	ND	150[d]	4.2	0
Vanadium	2	2	31.1, 28.5	13,000	84.9	0
Zinc	2	2	134, 53.9	100,000	844.9	0
pH	2	2	8.63, 8.98	NA	NA	0

Table 4.191-6 (continued)
AOC ADD 9 Sampling Results Summary for Metals
February 1999

GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Criteria**
Antimony	2	0	ND	1.2	0.0616	0
Arsenic	2	0	ND	0.008	0.0276	0
Barium	2	2	0.112J, 0.133J	1[d]	0.1777	0
Beryllium	2	0	ND	$3.3x10^{-5}$	0.002	0
Cadmium	2	0	ND	0.001	0.0017	0
Chromium	2	0	ND	190	0.0029	0
Cobalt	2	0	ND	2.2[d]	0.0071	0
Copper	2	0	ND	0.003	0.1072	0
Lead	2	0	ND	0.002	0.028	0
Mercury	2	0	ND	$4.0x10^{-5}$	0.0009	0
Molybdenum	2	1	0.0095J	0.18[d]	NA	0
Nickel	2	1	0.0025J	0.005	0.0958	0
Selenium	2	2	0.0038, 0.0025	0.015	0.040	0
Silver	2	0	ND	0.0007	0.0072	0
Thallium	2	0	ND	0.014	0.0075	0
Vanadium	2	0	ND	0.26[d]	0.0107	0
Zinc	2	0	ND	0.020	0.291	0
pH	2	2	7.29, 7.30	6.0 to 9.0 (pH units)	NA	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.
(d) No Ocean Plan criteria exist. Value presented is for informational purposes only.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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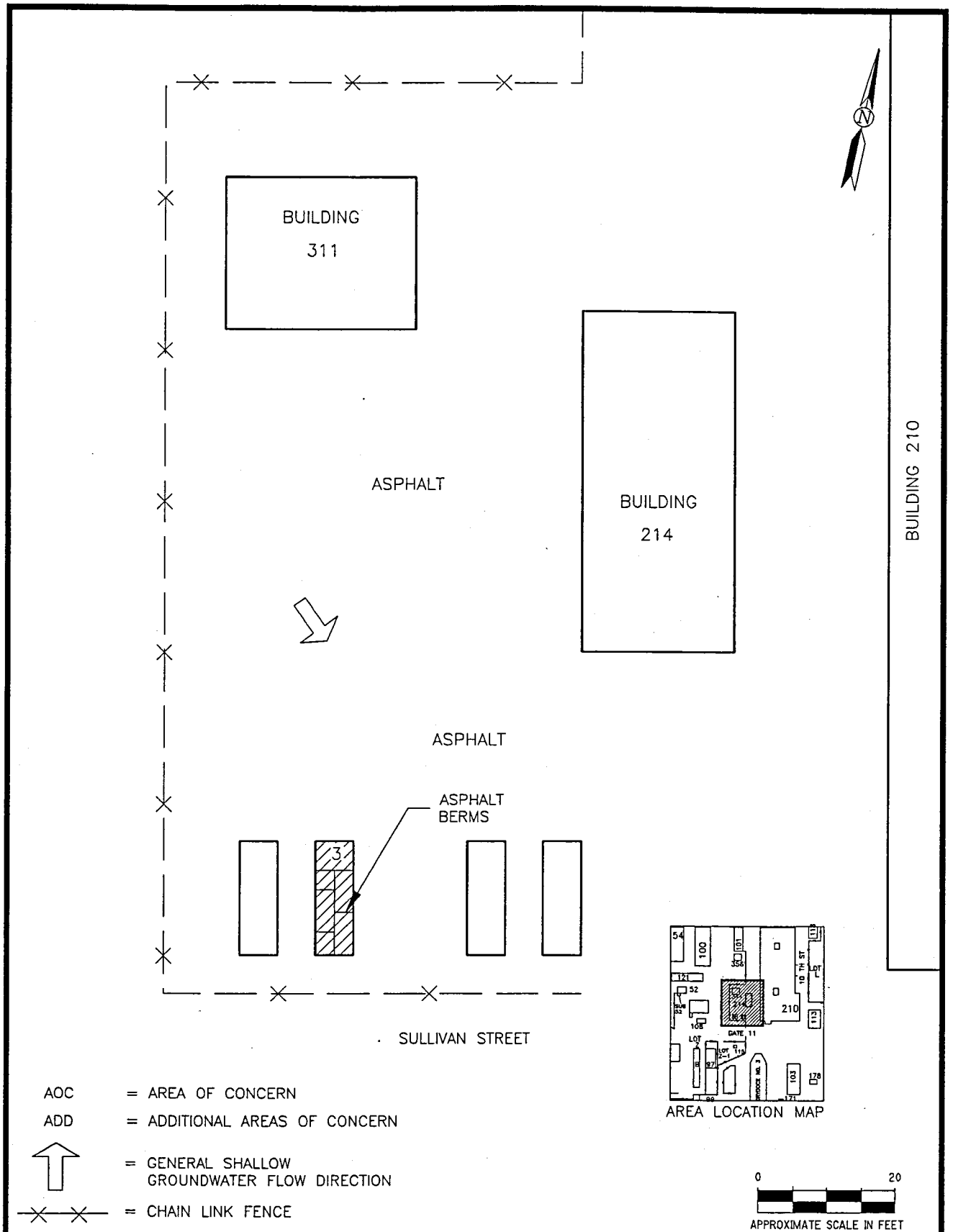

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 9 STORAGE AREA TEMPORARY BUILDING 3 GROUP B AREAS OF CONCERN	FIGURE 4.191-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/98 FN: 4.191-1		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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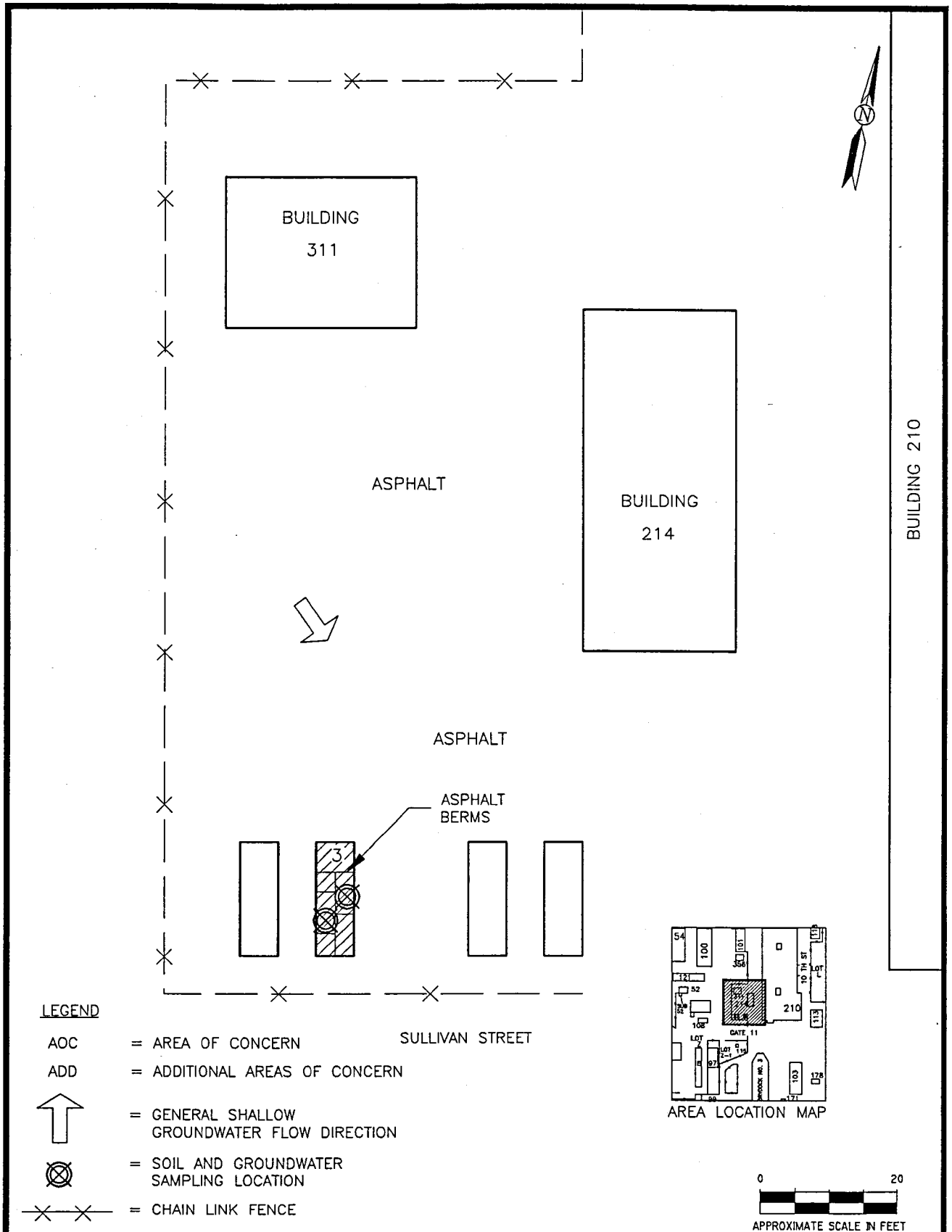
Figure 4.191-2 Storage Area, Temporary Building 3, (AOC ADD 9) Facing Southeast 12/14/98

Figure 4.191-3 Inside Temporary Storage Building 3 (AOC ADD 9) Facing South 3/10/99



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AOC ADD 9 STORAGE AREA TEMPORARY BUILDING 3 GROUP B AREAS OF CONCERN	FIGURE 4.191-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.191-4		
MODIFIED BY: J. Brown	PROJECT NO. 6210-014		

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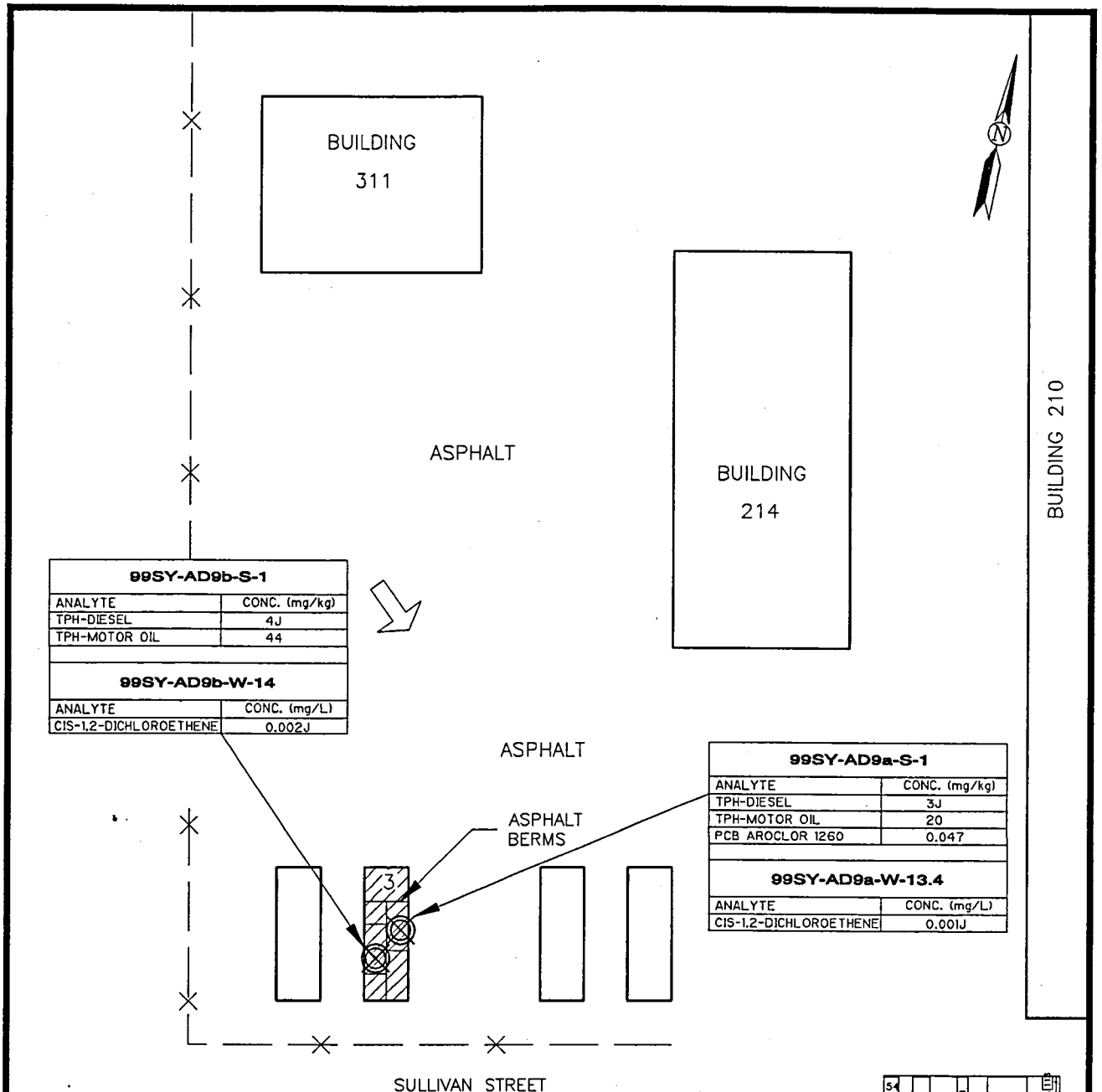


LEGEND

AOC = AREA OF CONCERN
ADD = ADDITIONAL
CONC. = CONCENTRATION
J = ESTIMATED CONCENTRATION
PCB = POLYCHLORINATED BIPHENYL
TPH = TOTAL PETROLEUM HYDROCARBONS

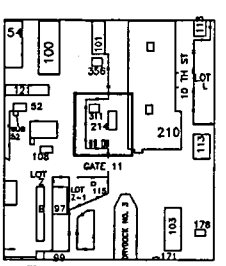
= GENERAL SHALLOW GROUNDWATER FLOW DIRECTION

= SOIL AND GROUNDWATER SAMPLING LOCATION

= CHAIN LINK FENCE

NOTE: THIS FIGURE SHOWS ORGANIC COMPOUNDS DETECTED. NO METALS EXCEEDED SCREENING CRITERIA.

99SY-AD9a-S-1= SAMPLE NAME (TYPICAL)
WHERE S = SOIL SAMPLE
WHERE W = WATER SAMPLE
WHERE 1 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER



AREA LOCATION MAP

0 20

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.191-5
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING RESULTS SUMMARY, FEBRUARYY 1999
AOC ADD 9
STORAGE AREA TEMPORARY BUILDING 3

GROUP B AREAS OF CONCERN

FIGURE
4.191-5

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

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4.192 SANDBLAST HOPPER/CONVEYOR SYSTEM (AOC ADD 10)

A description of the sandblast hopper/conveyor system (Structures 173 and 206 [AOC ADD 10]), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.192.1 to 4.192.4.

AOC ADD 10 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 20 January 1999.

4.192.1 Site Description

Table 4.192-1 summarizes the location and characteristics of AOC ADD 10. A site map is provided as Figure 4.192-1. Site photographs are shown in Figures 4.192-2 and 4.192-3.

Table 4.192-1
AOC ADD 10 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 10	North of Building 132	F-32, F-33	Silos used to store unused sand/abrasive blast material.	Two silos with a conveyor system. One subsurface hopper (covered with a metal grate) used for receiving new sandblast grit.	-Structure 173 silo: 10 feet in diameter by 36 feet high. -Structure 206 silo: 13 feet in diameter by 50 feet high. -Hopper: approximately 6 feet by 5 feet by 3 feet deep.

ADD = Additional AOC = Area of Concern No. = Number

AOC ADD 10, located southeast of Building 129 on the northern side of Sullivan Street, was inspected by the regulatory agencies during a 20 January 1999 site walk. Two silos, a conveyor system, and an associated subsurface hopper were observed. The silos and hopper were no longer in use during the site walk.

4.192.2 Operational History and Waste Characteristics

Table 4.192-2 summarizes the operational history and waste characteristics.

Table 4.192-2
AOC ADD 10 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 10	1955 to 1990s	Contained sandblast grit. Received new grit only.	None	Unknown.

ADD = Additional AOC AOC = Area of Concern No. = Number

New abrasive blast was dropped into the subsurface hopper from a rail car and lifted to the silos via the conveyor system. The hopper stored only new, unused blast material. No wastes were generated from the operations at Structures 173 and 206. Sandblasting occurred in Buildings 203 and 204 (see Section 4.178).

4.192.3 Preliminary Assessment Resources

Table 4.192-3 summarizes the resources used and interviews conducted in the PA evaluation.

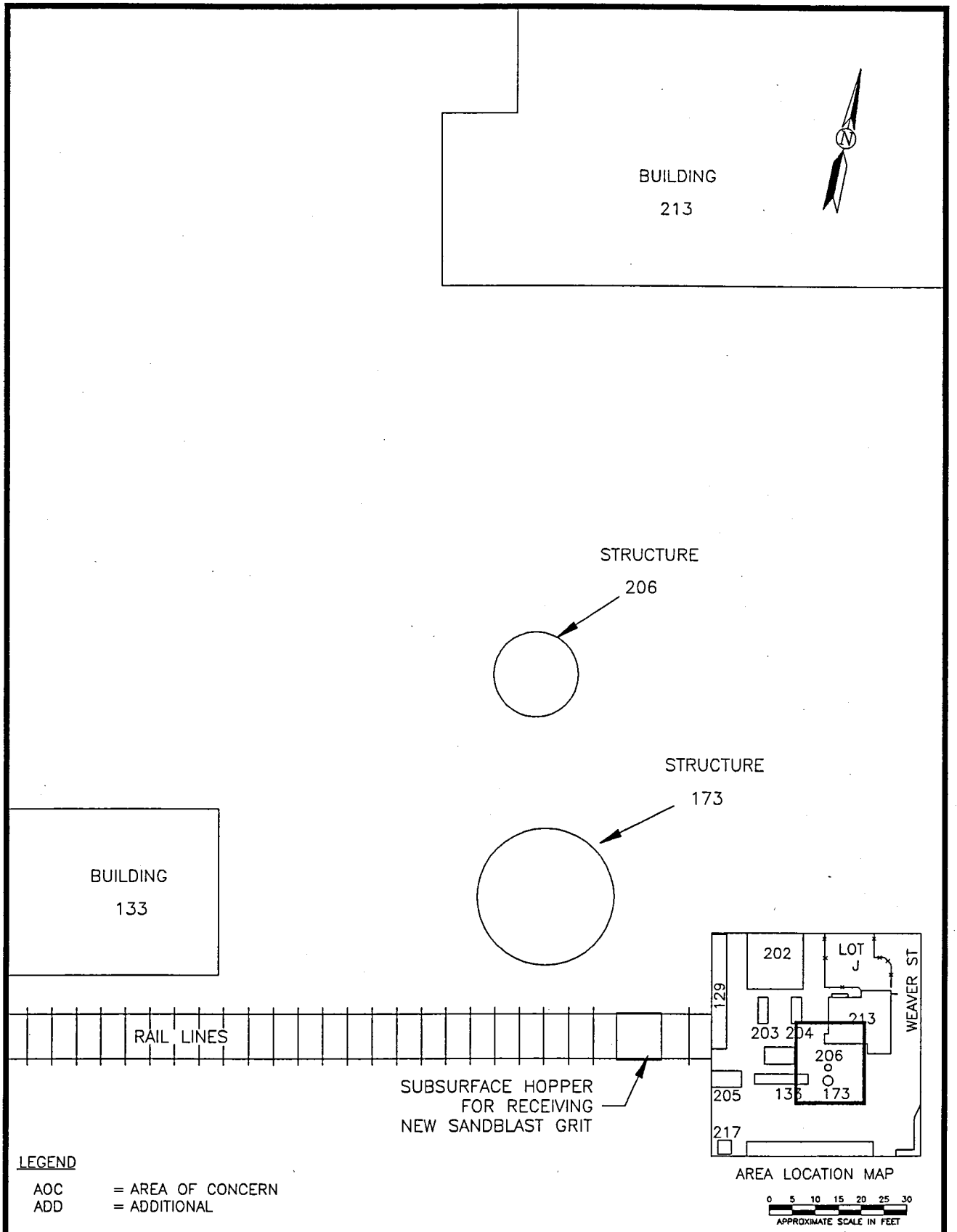
Table 4.192-3
AOC ADD 10 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
LBNSY Property Records	1996	LBNSY-PW	LBNSY building information
Personnel Interview	1998	Johnson, LBNSY, Nunn, LBNSY	Described the AOC and its intended function.

ADD = Additional AOC = Area of Concern LBNSY-PW = Long Beach Naval Shipyard, Public Works

4.192.4 PA Recommendations

No further action is recommended for AOC ADD 10 because only new, unused sandblast grit was placed into the lined subsurface hopper. No further action was agreed upon during the site walk by regulatory agencies on 20 January 1999.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 10 SANDBLAST HOPPER/ CONVEYOR SYSTEM GROUP B AREAS OF CONCERN	FIGURE 4.192-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.192-1		
MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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Figure 4.192-2 Sandblast Hopper/Conveyor System (AOC ADD 10), Facing Northwest 12/15/98

Figure 4.192-3 Sandblast Hopper (AOC ADD 10) Facing North 12/15/98

4.193 MERCURY MANOMETERS (AOC ADD 11)

A description of the mercury manometers (AOC ADD 11), their operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.193.1 to 4.193.4.

AOC ADD 11 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 20 January 1999.

4.193.1 Site Description

Table 4.193-1 summarizes the location and characteristics of AOC ADD 11. A site map is provided as Figure 4.193-1. A Drydock 3 mercury manometer (example) photograph is shown in Figure 4.193-2.

Table 4.193-1
AOC ADD 11 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 11	Drydocks and lift stations	Throughout base	Mercury manometers at drydocks and storm drain and sewer lift stations.	Approximately 1 glass tube at each of 16 locations.	Approximately 1.5-feet long and 3/8-inches in diameter

ADD = Additional AOC = Area of Concern No. = Number

Approximately 16 mercury manometers are located at LBNSY: one above the sewer pit at each of the three drydocks, one in each of the two drydock control rooms, six at storm drain lift stations, and five at sewage lift stations (Johnson, pers. comm. 1999). Each manometer consisted of an approximately 1.5-foot long, 3/8-inch diameter glass tube filled with mercury. The manometers were used to measure water pressures associated with drydock and lift station operations.

4.193.2 Operational History and Waste Characteristics

Table 4.193-2 summarizes the operational history and waste characteristics.

Table 4.193-2
AOC ADD 11 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 11	1940s to present (1999)	Mercury manometers were used to measure water pressures associated with drydock and lift station operations.	None known.	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

Mercury manometers were used for measuring water pressures in association with pumping operations. They were most likely installed during the construction of the drydocks and the storm drain and sewage lift stations in the 1940s. Any information pertaining to breakage of any mercury manometers and/or spillage of mercury is unknown.

4.193.3 Preliminary Assessment Resources

Table 4.193-3 summarizes the resources used and interviews conducted in the PA evaluation.

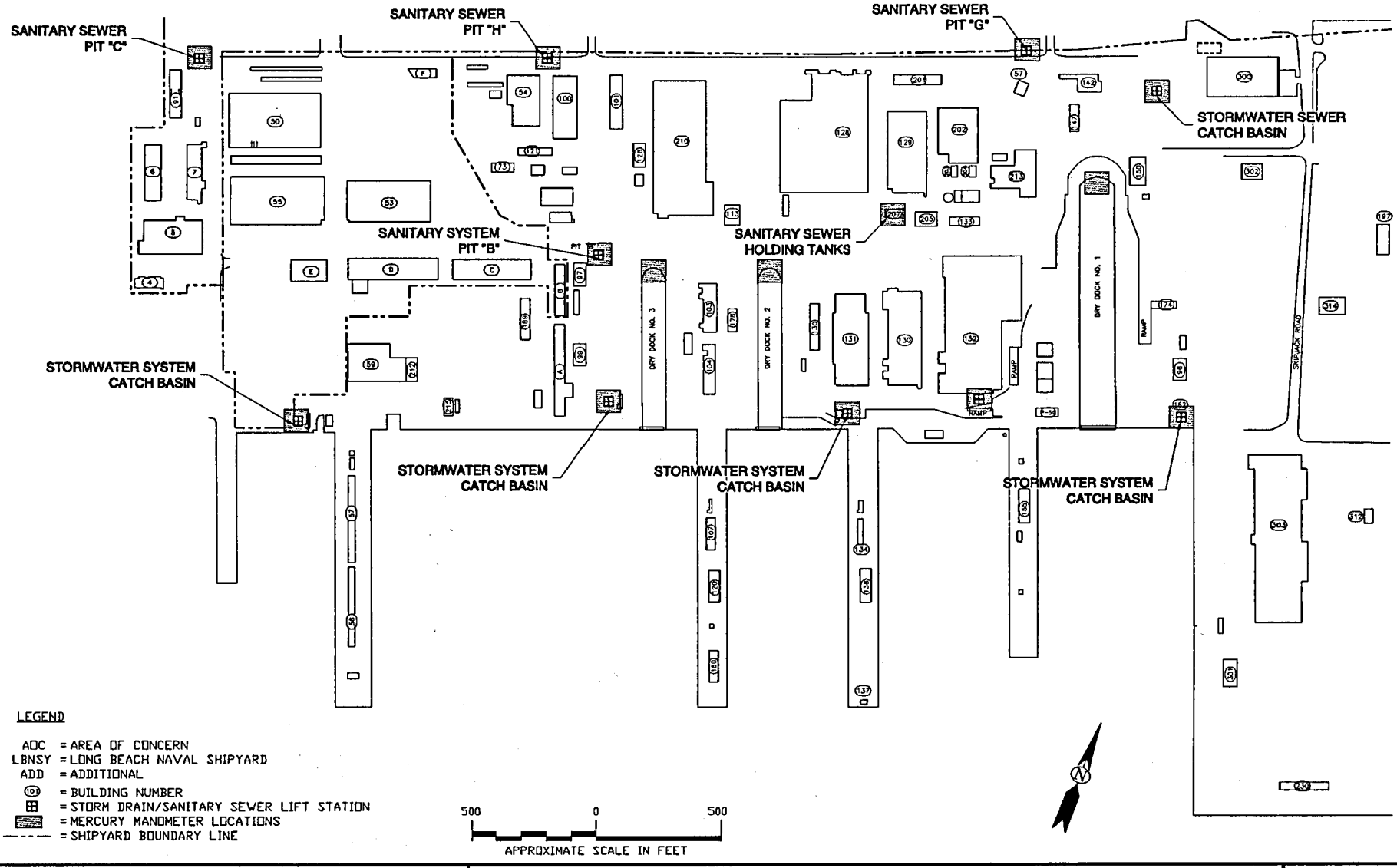
Table 4.193-3
AOC ADD 11 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Personnel Interview	1998	Nunn, LBNSY	Described the AOC and its intended function.

ADD = Additional AOC = Area of Concern LBNSY = Long Beach Naval Shipyard

4.193.4 PA Recommendations

No further action is recommended for AOC ADD 11 because mercury was contained in sealed tubes, the volume of mercury in each manometer was small, no documentation of spills was identified, and the manometers are located above drydock sewer pit shafts or in rooms with floors (rather than above soil that could be readily impacted and could be easily sampled). The regulatory agencies agreed during a site walk on 20 January 1999 that no sampling was required.



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	AOC ADD 11 MERCURY MANOMETER LOCATIONS AT LBNSY GROUP B AREAS OF CONCERN	FIGURE 4.193-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.193-1 MODIFIED BY: J. Brown PROJECT NO. 6210-014		

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4.193-3

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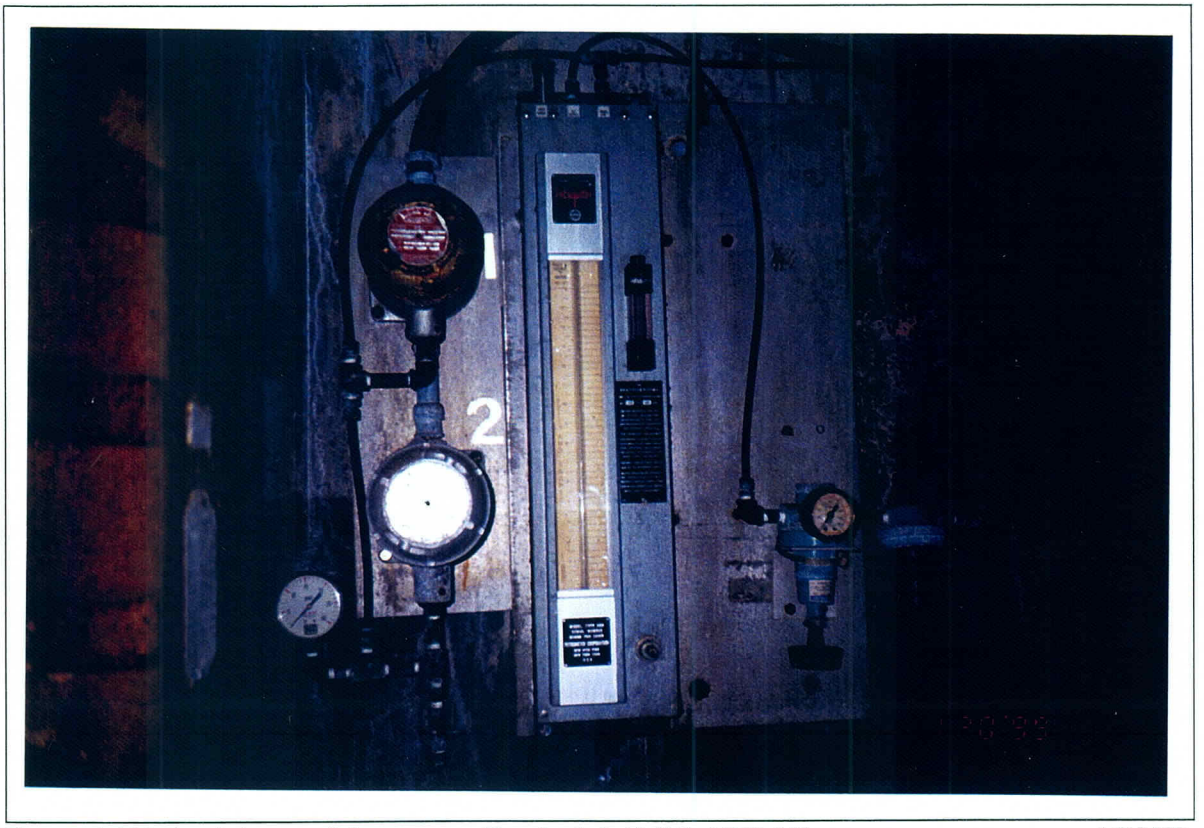


Figure 4.193-2 Mercury Manometer, Drydock 3 (AOC ADD 11) Facing West 1/20/99

4.194 MERCURY GAGE REPAIR AREA, BUILDING 197 (AOC ADD 12)

A description of the mercury gage repair area at Building 197 (AOC ADD 12), the operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.194.1 to 4.194.4. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 12 was not originally identified as part of the Group B AOCs in the 1996 EBS. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 20 January 1999.

4.194.1 Site Description

Table 4.194-1 summarizes the location and characteristics of AOC ADD 12. A site map is provided as Figure 4.194-1. Site photographs are shown in Figures 4.194-2 and 4.194-3.

Table 4.194-1
AOC ADD 12 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 12	Inside northwestern corner of Building 197	F-42, G-42	Former mercury gage repair area.	Former mercury gage repair area and a floor drain.	Repair area: approximately 20 feet by 20 feet.

ADD = Additional AOC = Area of Concern No. = Number

The former mercury gage repair area, located in the northwestern corner of Building 197 on Pier E, was inspected during the 20 January 1999 site walk. Pier E reverted to the City of Long Beach in 1998. During the 20 January 1999 site walk, Building 197 was being used by the City of Long Beach as a temporary shelter for homeless people. The floor area inside the building was concrete that was covered with carpet. No evidence of former mercury gage repair operations was observed. Outside the northwestern corner of the building, no evidence of any sumps, pits, or USTs was observed.

4.194.2 Operational History and Waste Characteristics

Table 4.194-2 summarizes the operational history and waste characteristics.

Table 4.194-2
AOC ADD 12 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 12	Approximately 1965 to 1990s	Repair and calibration of instruments and gages which used mercury.	Potentially waste mercury	Unknown.

ADD = Additional AOC = Area of Concern No. = Number

LBNSY Drawing Number 37895 dated 19 October 1965 shows a floor sink inside the northwestern corner of Building 197 and a steam regulator pit outside. There was no visual evidence of the pit during the January 1999 site reconnaissance. The floor sink drained to the regulator pit, where a sump discharged to a storm drain line (see Figure 4.194-1). Ventilation ductwork was observed outside Building 197 during the site walk, but the ventilation hoods inside Building 197 were no longer present.

4.194.3 Preliminary Assessment Resources

Table 4.194-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.194-3
AOC ADD 12 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Navy drawing No. 37895	1965	LBNSY-PW	Shows northwestern area of Building 197.
Navy drawing No. 37896	1965	LBNSY-PW	Shows northwestern area of Building 197.
Navy drawing No. 23710	1983	LBNSY-PW	Gage repair facility, Building 197
Update of Engineering Evaluation	1988	Archiplan	Shows Building 197 layout in 1988.
LBNSY property record	1996	LBNSY-PW	Describes LBNSY buildings.
Personnel Interview	1998	Nunn, LBNSY	Described the AOC and its intended function.

ADD = Additional AOC = Area of Concern LBNSY-PW = Long Beach Naval Shipyard, Public Works

4.194.4 PA Recommendations

Based upon PA findings, investigational sampling was recommended because operations in this area involved mercury that may have leaked from the floor sink drain or pit outside Building 197 (CDM Federal 1999).

4.194.5 Number of Samples and Analyses

As proposed in Work Plan Addendum Number 2 (CDM Federal 1999), three soil and three groundwater samples were collected from the northwestern area outside Building 197. The samples were collected on 2 March 1999 and analyzed for mercury as indicated in Table 4.194-4.

Table 4.194-4
AOC ADD 12 Number of Samples and Analyses

Matrix	Mercury
Soil	3
Groundwater	3[(a)]

Notes:
(a) Dissolved metals.
ADD = Additional Area of Concern AOC = Area of Concern

4.194.6 Analytical Results

Mercury was detected at a concentration of 0.29 mg/kg in one of the three soil samples collected at AOC ADD 12. Mercury was detected in all three groundwater samples collected at AOC ADD 12 at concentrations of 0.00015, 0.00013, and 0.00010 mg/L. Results are summarized in Table 4.194-5 and Figure 4.194-4.

4.194.7 Data Comparison to Screening Criteria

Mercury was not detected at concentrations that exceeded its screening criteria in any samples collected at AOC ADD 12. Note that background concentration calculations excluded contaminated soils and groundwater.

4.194.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.194.9 Recommendations

No further action is recommended for the Mercury Gage Repair Area (AOC ADD 12) because soil and groundwater samples were collected but mercury did not exceed its screening criteria.

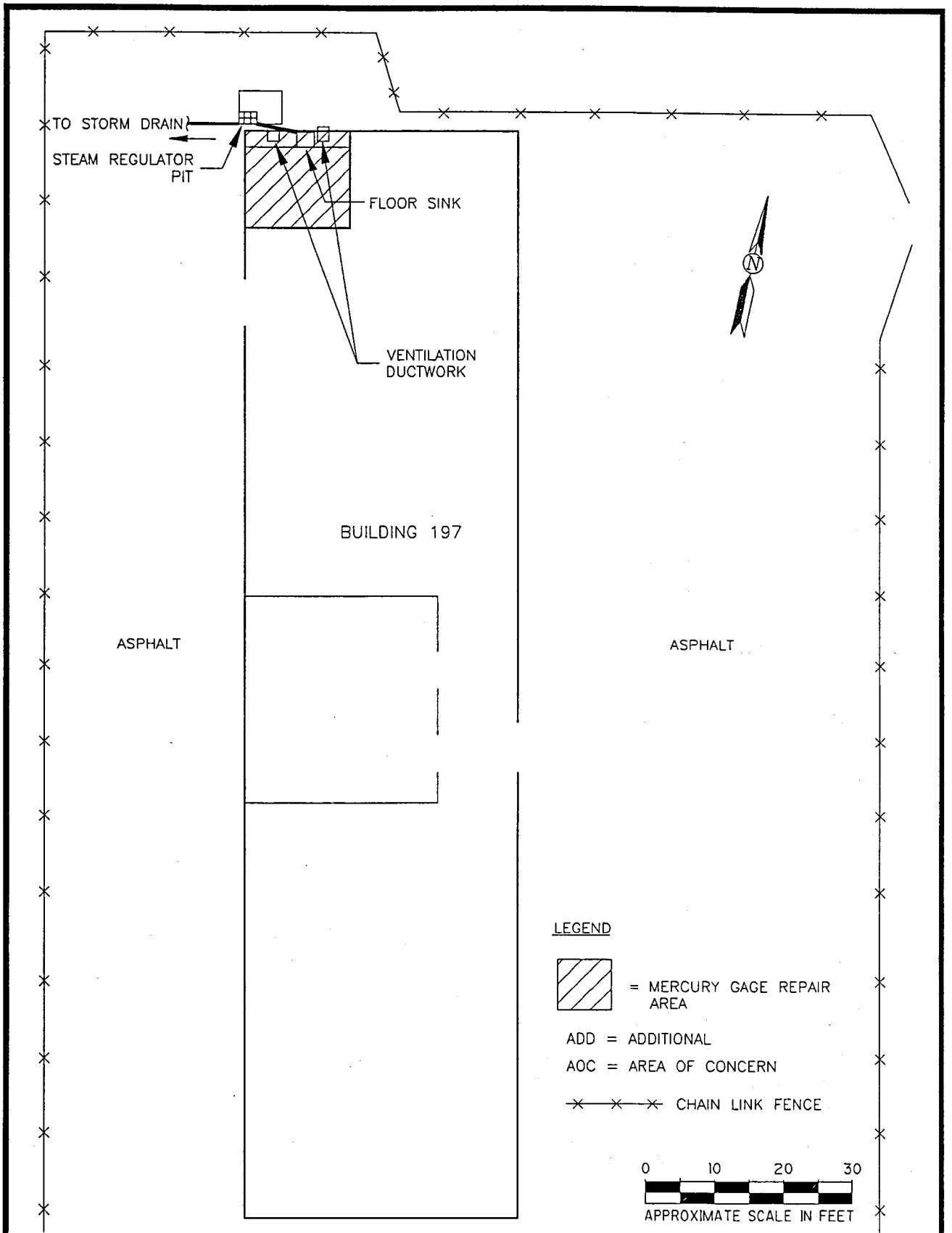
Table 4.194-5
AOC ADD 12 Sampling Results Summary for Mercury
March 1999

SOIL						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**
Mercury	3	1	0.29	560	2.5	0
GROUNDWATER						
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Dissolved Concentration (mg/L)**	**Screening Criteria for Water[c] (mg/L)**	**Background Level[b] (mg/L)**	**No. of Detections above Industrial PRG and Background**
Mercury	3	3	0.00015, 0.00013, 0.00010	0.00004	0.00090	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria for water.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
N/A = Not Applicable
ND = Not Detected
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 12 MERCURY GAGE REPAIR AREA BUILDING 197	FIGURE 4.194-1
CDM Federal Programs Corporation *A Subsidiary Of Camp Dresser & McKee Inc.*	DATE: 5/99 FN: 4.194-1		
MODIFIED BY:	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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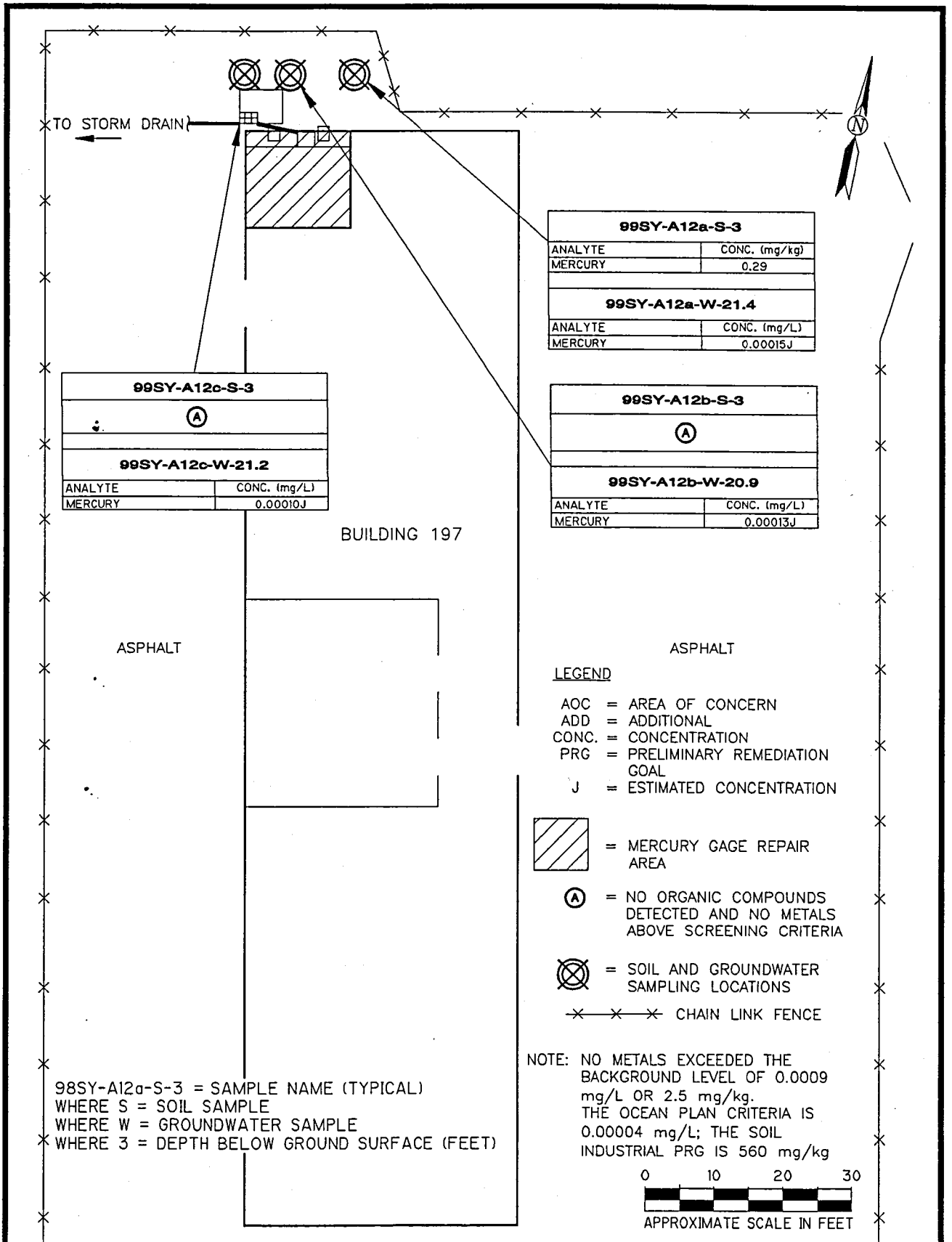
Figure 4.194-2 Inside Former Mercury Gage Repair Area, Building 197 (AOC ADD 12) Facing North 1/20/99

Figure 4.194-3 Outside Former Mercury Gage Repair Area, Building 197 (AOC ADD 12) Facing East 1/20/99



LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		SAMPLING LOCATIONS AND RESULTS SUMMARY, MARCH 1999 AOC ADD 12 MERCURY GAGE REPAIR AREA BUILDING 197	FIGURE 4.194-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.194-4		
MODIFIED BY:	PROJECT NO. 6210-014	GROUP B AREAS OF CONCERN	

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4.195 MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 104 (AOC ADD 13)

A description of the mercury-sealed motor pump stand area at Building 104 (AOC ADD 13), its operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.195.1 to 4.195.4. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 13 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 20 January 1999.

4.195.1 Site Description

Table 4.195-1 summarizes the location and characteristics of AOC ADD 13. A site map is provided as Figure 4.195-1. Site photographs are shown in Figures 4.195-2 through 4.195-5.

Table 4.195-1
AOC ADD 13 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 13	South of Building 104	J-26	Pump disassembly and service area for Drydocks 2 and 3.	Pump stand and spill pan located on a concrete pad with berm.	Pump stand: approximately 25 feet high Spill pan dimensions: approximately 4 feet by 4 feet by 6 inches Concrete pad: 20 feet by 20 feet with 8-inch-high berm.

ADD = Additional AOC = Area of Concern No. = Number

During the December 1998 site reconnaissance, the mercury-sealed motor pump stand area south of Building 104 was inspected. The stand, a drydock pump, and the spill pan were still in place. The stand was installed on a concrete pad surrounded by an eight-inch high concrete berm. The concrete pad appeared to be in good condition. Sediment was observed in the bermed area and a sump was identified in the southwestern corner of the bermed area.

4.195.2 Operational History and Waste Characteristics

Table 4.195-2 summarizes the operational history and waste characteristics.

Table 4.195-2
AOC ADD 13 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 13	1960s to 1990s	Disassembly and service of drydock pumps that contained mercury.	Mercury removed from the pumps was recycled.	Less than 5 pounds of mercury spilled per year.

ADD = Additional AOC = Area of Concern No. = Number

According to the IAS (NEESA 1983), the pump stand located south of Building 104 was used to disassemble and service submersible pumps used to dewater Drydocks 2 and 3. The 300-horsepower pumps, each containing approximately 22 pounds of mercury, were dismantled south of Building 104 (NEESA 1983), then sent to Public Works for repair. The mercury was removed, filtered, and returned to the pumps as part of an attempt to recycle mercury at LBNSY. Mercury recycling was reportedly practiced at the shipyard since 1967 and perhaps earlier (NEESA 1983). The pumps were then returned to the pump stands for final reassembly.

Spilled mercury was collected in the spill pan (called a sump in the 1983 IAS), but was reported to be less than 5 pounds of spilled mercury per year (NEESA 1983). Any spilled mercury was disposed of as hazardous waste (NEESA 1983).

4.195.3 Preliminary Assessment Resources

Table 4.195-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.195-3
AOC ADD 13 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	Describes Buildings 104 and 150 pump stand operations.
Navy Map No. 24446	1984	LBNSY-PW	Building 104 and 150 pump repair stands, mercury decontamination alterations.
Two-page Written Procedure for the Removal of Submersible Pumps	Unknown	LBNSY	Describes the pump service operations.
Personnel Interview	1998	Nunn, LBNSY	Described the AOC and its intended function.

ADD = Additional
AOC = Area of Concern
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity
No. = Number

4.195.4 PA Recommendations

Investigational sampling was recommended to evaluate any residual mercury contamination in the surface sediment found within the berm and the spill pan. In addition, one sediment sample was recommended for collection from the storm water catch basin nearest to the pump stand to assess whether any mercury may have been carried by storm water from the pump stand to the storm drain system (CDM Federal 1999).

4.195.5 Number of Samples and Analyses

One sample was collected from the sediment in the spill pan (99SY-A13a-S-0), one sample was collected from sediment inside a sump within the bermed area (99SY-A13b-S-1), and one sample was collected from the nearest storm drain catch basin about 50 feet away (99SY-A13c-S-1.5 and its duplicate 99SY-A13e-S-1.5). Sample locations are shown in Figure 4.195-6. The samples were planned for metals analysis, including mercury. During sampling activities on 5 March 1999, the sediment in the sump and storm drain catch basin appeared oily. Therefore, additional sample volume was collected at these two locations and these samples were analyzed for VOCs, SVOCs, PCBs, TPH-diesel, and TPH-motor oil. Table 4.195-4 identifies the number of samples collected and analyzed for AOC ADD 13.

Table 4.195-4
AOC ADD 13 Number of Samples and Analyses

Matrix	VOCs	SVOCs	PCBs	Metals	TPH-Diesel	TPH-Motor Oil
Sediment	2	2	2	3	2	2

ADD = Additional Area of Concern
AOC = Area of Concern
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarborns
VOCs = Volatile Organic Compounds

4.195.6 Analytical Results

Analytical results are discussed below for the sediment samples. Organic compound results are summarized in Table 4.195-5, while metals results are summarized in Table 4.195-6. Figure 4.195-6 summarizes analytical results.

VOCs, SVOCs, TPH-diesel, TPH-oil, and PCBs were detected in at least one of the two samples collected. The VOC naphthalene was detected at a concentration of 0.01 mg/kg in sample 99SY-A13b-S-1. The VOC 1,2,4-trimethylbenzene was detected in sample 99SY-A13e-S-1.5 at 0.002J mg/kg. The SVOC BEHP was detected in both samples. TPH was detected in samples 99SY-A13b-S-1 and 99SY-A13e-S-1.5 at concentrations of 26,000J mg/kg and 490J mg/kg for TPH-diesel, and at concentrations of 53,000J mg/kg and 5,200J mg/kg for TPH-oil, respectively. PCB Aroclor 1260 was detected at a concentration of 0.99J mg/kg and PCB Aroclor 1248 was detected at a concentration of 0.97J mg/kg in sample 99SY-A13b-S-1. Sample 99SY-A13e-S-1.5 had a concentration of 0.28J mg/kg for PCB Aroclor 1260. Overall,

the highest TPH and PCB concentrations were in the sump sample, with lower concentrations (typically roughly 10 times lower) in the storm drain catch basin.

Fourteen of the 17 metals were detected in at least one of the sediment samples as shown in Table 4.194-6.

The main contaminant of concern for AOC ADD 13 was mercury, which was detected in all samples collected. The highest concentration of mercury was detected in the sample collected from the sump (99SY-A13b-S-1) at 181 mg/kg. The sample collected in the spill pan (99SY-A13a-S-0) had a mercury concentration of 27 mg/kg, while the sample from the storm drain catch basin (99SY-A13c-1.5) had a mercury concentration of 1.2J mg/kg.

4.195.7 Data Comparison to Screening Criteria

In sediment from the spill pan (99SY-A13a-S-0), arsenic exceeded its industrial PRG and background level. For hazardous waste characterization purposes, the concentrations of chromium, lead, mercury, and zinc exceeded either federal or state screening criteria.

In the sediment from the bermed area sump (99SY-A13b-S-1), lead, TPH-diesel, TPH-oil, and PCBs exceeded their respective industrial PRG (and background level for lead). For hazardous waste characterization purposes, the concentrations of chromium, lead, and mercury exceeded either federal or state screening criteria.

In sediment from the storm drain catch basin (99SY-A13c-S-1.5 and its duplicate 99SY-A13e-S-1.5), lead exceeded its industrial PRG and background level. For hazardous waste characterization purposes, the concentrations of chromium and lead exceeded either federal or state screening criteria.

The highest mercury concentration (181 mg/kg) did not exceed the industrial PRG of 560 mg/kg.

In one or more samples, BEHP, PCBs, cadmium, chromium, lead, mercury, and/or nickel exceeded their respective residential PRG, but not their industrial PRG.

4.195.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

Because samples from this AOC were not originally planned for organic compounds analysis, analysis for VOCs, SVOC, TPH, and PCBs was listed on the chain of custody form as "hold" analysis. Several days later when CDM Federal and the Navy agreed to analyze these samples, the laboratory was notified to proceed with analysis. However, due to an error in the

laboratory, samples were not analyzed until 21 days after the samples had been collected, so certain holding times were missed. Data validators qualified these results as estimated (J/UJ). These data were not rejected because samples were analyzed within two weeks of the holding time (i.e., the two week holding time was not missed by more than two weeks).

4.195.9 Recommendations

The sediment located within the Mercury-Sealed Motor Pump Stand spill pan, sump, and nearby storm drain catch basin should be removed and disposed of as hazardous waste. Removal of sediment from the storm drain catch basin will be handled as part of a separate sediment removal project in 1999.

Table 4.195-5
AOC ADD 13 Sampling Results Summary for Organic Compounds
March 1999

SEDIMENT (99SY-A13b-S-1 Sump, 99SY-A13e-S-1.5 Storm Drain Catch Basin)								
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**No. of Detections above Criteria**	**State of California Regulatory Levels[f] (mg/kg)**	**U.S. EPA RCRA Criteria[f] (mg/kg)**	**No. of Detections Exceeding State or Federal Criteria**
VOCs (60 analytes)[b]								
Naphthalene	2	1	0.01J	190	0	NA	NA	0
1,2,4-Trimethylbenzene	2	1	0.002J	170	0	NA	NA	0
SVOCs (64 analytes)[b]								
Bis(2-ethylhexl)phthalate (BEHP)	2	2	41J, 4.7J	210	0	NA	NA	0
TPH-Diesel	2	2	**26,000J [e]**, 490J	10,000[c]	1	NA	NA	0
TPH-Motor Oil	2	2	**53,000J[e]**, 5,200J	50,000[c]	1	NA	NA	0
PCBs								
Aroclor 1248	2	1	**0.97J [d] [e]**	1.3 [d]	1 [d]	50	500	0
Aroclor 1260	2	2	**0.99J [d] [e]**, 0.28J	1.3 [d]	1 [d]	50	500	0

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) If not listed in this table, the remaining analytes were not detected.
(c) From Los Angeles Resource Water Quality Control Board, *Interim Site Assessment and Cleanup Guidebook*, Table 4-1, dated May 1996. Values are for soils above a non-drinking water aquifer.
(d) Criterion is for total PCBs. 0.97 + 0.99 = 1.76 mg/kg total PCBs > 1.3 mg/kg.
(e) Sample 99SY-A13b-S-1 from sump within berm.
(f) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used for soil.

Bold results indicate that industrial PRG screening criteria were exceeded.

ADD = Additional
AOC = Area of Concern
J = Estimated Concentration
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
NA = Not Available
ND = Not Detected
No. = Number
PCB = Polychlorinated Biphenyl
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbon
U.S. EPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds

Table 4.195-6
AOC ADD 13 Sampling Results Summary for Metals
March 1999

SURFACE SEDIMENT/SOIL									
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**	**State of California Regulatory Levels[c] (mg/kg)**	**U.S. EPA RCRA Criteria[c] (mg/kg)**	**No. of Detections Exceeding State or Federal Criteria**
Antimony	3	3	8.9, 12.0, 9.6J,	750	11.3	0	500	NA	0
Arsenic	3	3	**29.7J**, 17.4J, 8.3J	3.0	17.5	1	500	100	0
Barium	3	3	364J, 961J, 412J	100,000	275	0	10,000	2,000	0
Beryllium	3	0	ND	3,400	1.4	0	75	NA	0
Cadmium	3	3	9.0J, 17.7J, 3.0J	930	1.7	0	100	20	0
Chromium	3	3	153[d], 199[d], 299J[d]	450	60.9	0	2,500	100	3
Cobalt	3	3	14.4, 19.8, 14.5J	29,000	24.5	0	8,000	NA	0
Copper	3	3	1720, 2200, 1010J	70,000	798.7	0	2,500	NA	0
Lead	3	3	**573J[d], 1040J[d], 1090J[d]**	1000	185.2	2	1,000	100	3
Mercury	3	3	27.0[d], 181[d], 1.2J	560	2.5	0	20	4	2
Molybdenum	3	3	61, 54.1, 21.9J	9,400	NA	0	3,500	NA	0
Nickel	3	3	83.9J, 166J, 98.0J	37,000	32.6	0	2,000	NA	0
Selenium	3	0	ND	9,400	1.4	0	100	20	0
Silver	3	2	1.3, 0.24	9,400	1.5	0	500	100	0
Thallium	3	0	ND	150	4.2	0	700	N/A	0
Vanadium	3	3	21.5, 52.8, 40.4J	13,000	84.9	0	2,400	NA	0
Zinc	3	3	8500[d], 3730, 894J	100,000	844.9	0	5,000	NA	1
pH [e]	1	1	7.55	NA	NA	0	NA	NA	0

Notes:

Bold indicates that industrial PRG and background levels were exceeded.

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) See Section 3.7 for screening criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used for soil.
(d) Hazardous waste classification screening criteria (state or federal) were exceeded.
(e) pH analysis was not requested, but the analytical laboratory performed pH analysis.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
No. = Number
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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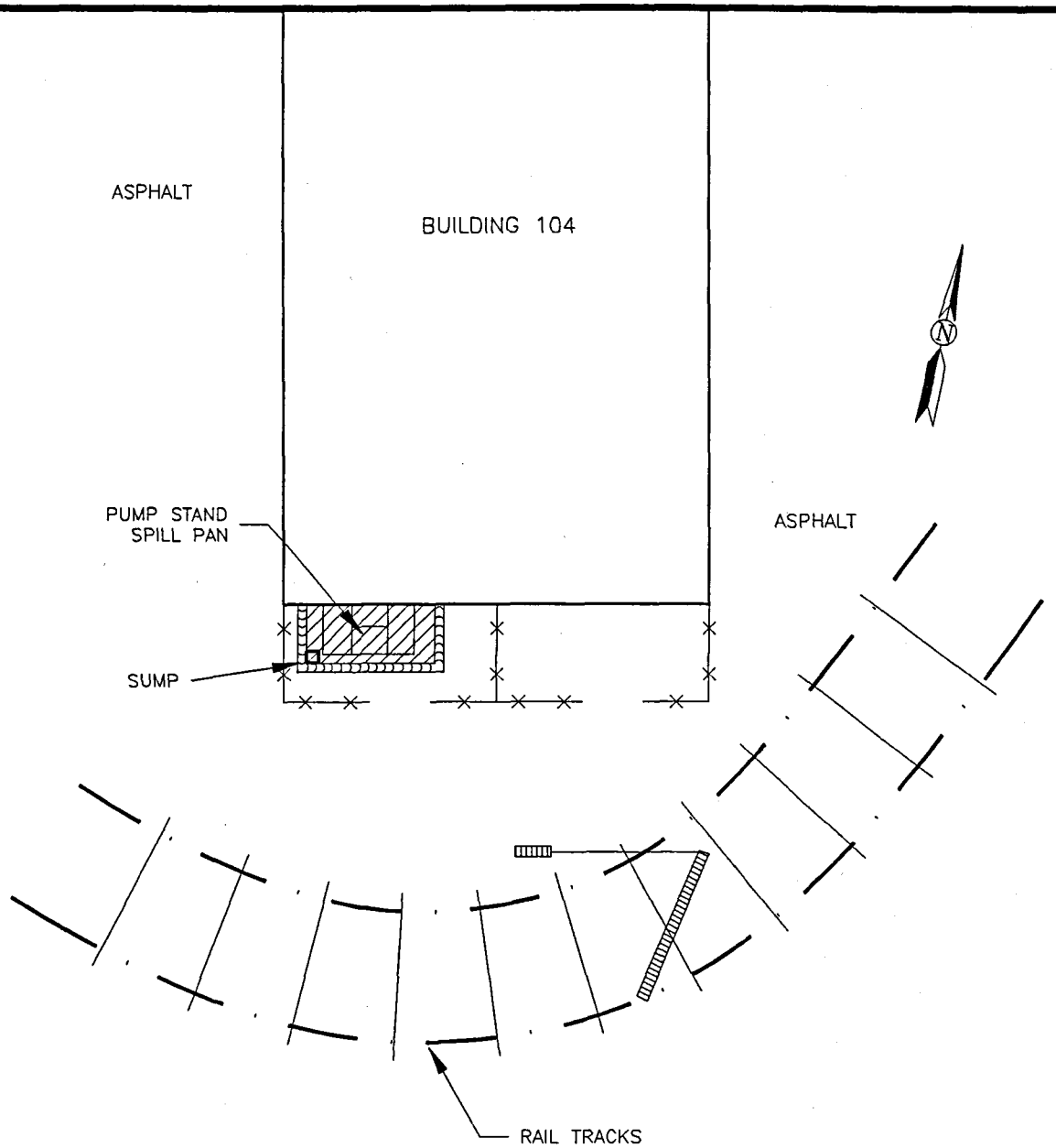

LEGEND

= MERCURY SEALED MOTOR PUMP STAND AREA

= CONCRETE BERM

ADD = ADDITIONAL AREA OF CONCERN

AOC = AREA OF CONCERN

= CHAIN LINK FENCE

= STORM DRAIN CATCH BASIN

0 15 30 45

APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 13 MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 104 GROUP B AREAS OF CONCERN	FIGURE 4.195-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 6/99 FN: 4.195-1		
MODIFIED BY:	PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

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Figure 4.195-2 Mercury-Sealed Motor Pump Stand Area, Building 104 (AOC ADD 13) Facing Northeast 12/15/98

Figure 4.195-3 Sample 99SY-A13a-S-0 Location Inside Spill Pan, Mercury-Sealed Motor Pump Stand Area, Building 104 (AOC ADD 13) 1/20/99

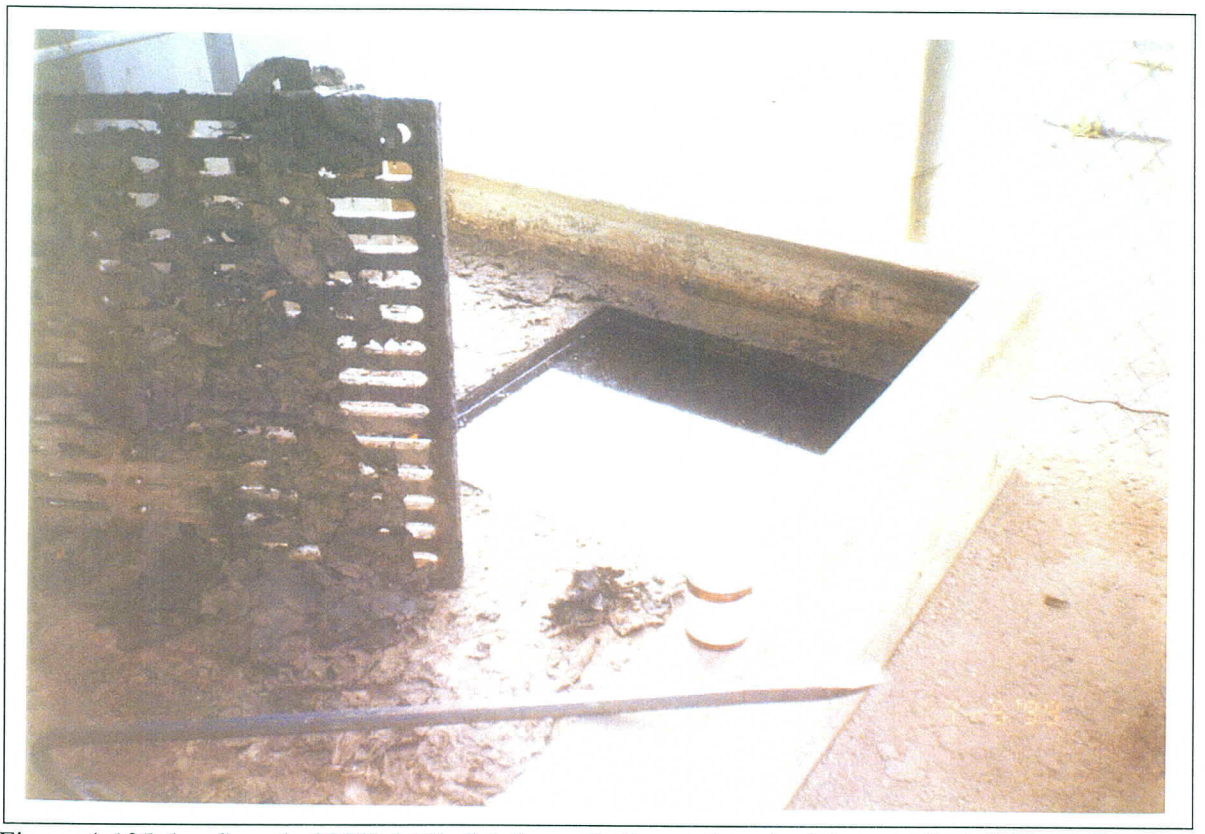


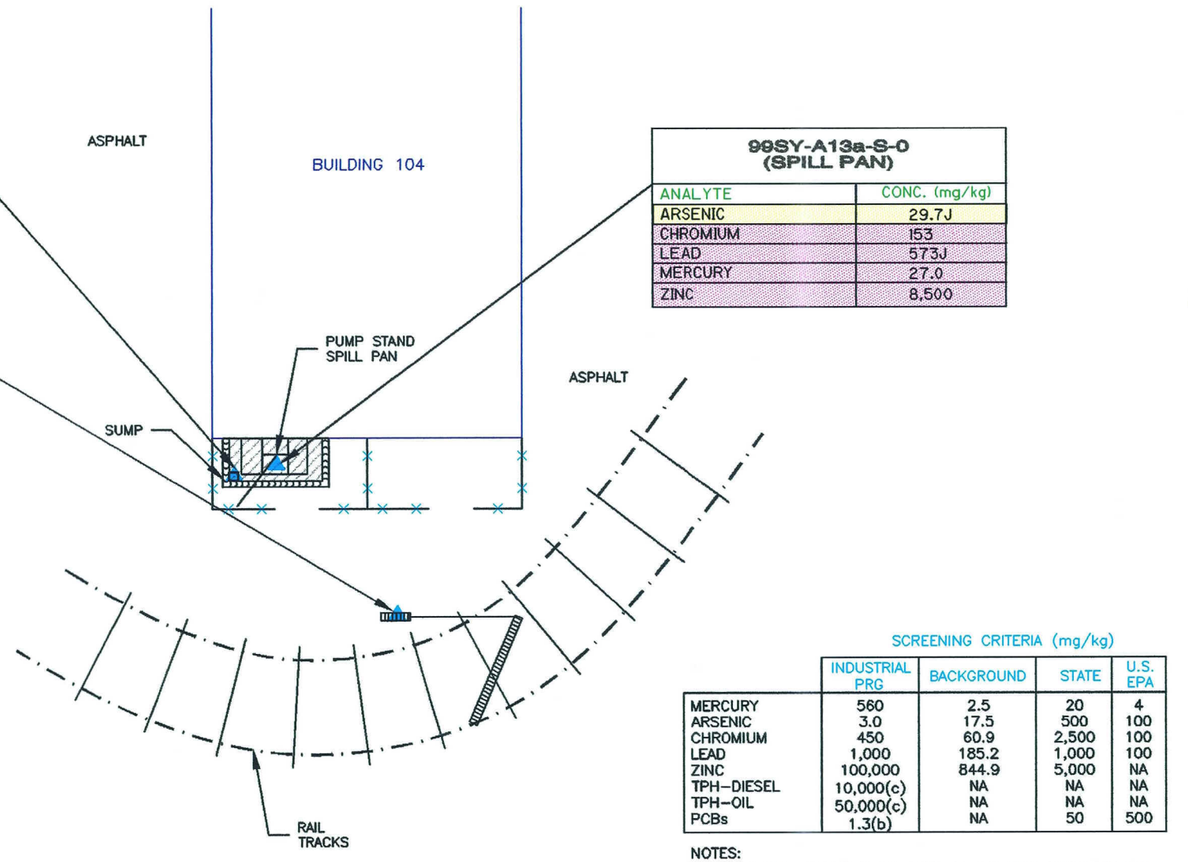
Figure 4.195-4 Sample 99SY-A13b-S-1 Sump Sediment Sample, Mercury-Sealed Motor Pump Stand Area, Building 104 (AOC ADD 13), Facing Southeast 3/5/99

Figure 4.195-5 Sample 99SY-A13c-S-1.5 Location Inside Storm Drain Catch Basin, Mercury-Sealed Motor Pump Stand Area, Building 104 (AOC ADD 13) 3/5/99

99SY-A13b-S-1 (SUMP)	
ANALYTE	CONC. (mg/kg)
NAPHTHALENE	0.01
BIS(2-ETHYLHEXYL)PHTHALATE	41J
TPH-DIESEL	26,000
TPH-OIL	53,000J
PCB AROCLOR 1248	0.97J
PCB AROCLOR 1260	0.99J
LEAD	1040J
CHROMIUM	299J

99SY-A13c-S-1.5 (STORM DRAIN CATCH BASIN)	
ANALYTE	CONC. (mg/kg)
LEAD	1090J
CHROMIUM	199
MERCURY	181

99SY-A13e-S-1.5 [a] (DUPLICATE)	
ANALYTE	CONC. (mg/kg)
1,2,4-TRIMETHYLBENZENE	0.002J
BIS(2-ETHYLHEXYL)PHTHALATE	4.7J
TPH-DIESEL	490J
TPH-OIL	5200J
PCB AROCLOR 1260	0.28J



99SY-A13a-S-0 (SPILL PAN)	
ANALYTE	CONC. (mg/kg)
ARSENIC	29.7J
CHROMIUM	153
LEAD	573J
MERCURY	27.0
ZINC	8,500

SCREENING CRITERIA (mg/kg)

	INDUSTRIAL PRG	BACKGROUND	STATE	U.S. EPA
MERCURY	560	2.5	20	4
ARSENIC	3.0	17.5	500	100
CHROMIUM	450	60.9	2,500	100
LEAD	1,000	185.2	1,000	100
ZINC	100,000	844.9	5,000	NA
TPH-DIESEL	10,000(c)	NA	NA	NA
TPH-OIL	50,000(c)	NA	NA	NA
PCBs	1.3(b)	NA	50	500

NOTES:
(a) DUPLICATE SAMPLE 99SY-A13E-S-1.5 WAS ANALYZED FOR VOCS, SVOCS, TPH-OIL, TPH-DIESEL AND PCBS BECAUSE SEDIMENT APPEARED OILY.
(b) CRITERION IS FOR TOTAL PCBs
(c) REGIONAL WATER QUALITY CONTROL BOARD SCREENING CRITERIA.

LEGEND

- ▲ = SEDIMENT SAMPLING LOCATIONS
- AOC = AREA OF CONCERN
- PCB = POLYCHLORINATED BIPHENYL
- PRG = PRELIMINARY REMEDIATION GOAL
- TPH = TOTAL PETROLEUM HYDROCARBONS
- NA = NOT AVAILABLE
- U.S EPA = UNTTED STATES ENVIRONMENTAL PROTECTION AGENCY
- = EXCEEDED INDUSTRIAL PRG AND BACKGROUND LEVEL (METALS)
- = EXCEEDED HAZARDOUS WASTE CRITERIA
- = EXCEEDED BOTH CRITERIA
- = STORM DRAIN CATCH BASIN
- = CONCRETE BERM
- = MERCURY SEALED MOTOR PUMP STAND AREA

99SY-A13c-S-1.5=SAMPLE NAME (TYPICAL)
WHERE S = SEDIMENT SAMPLE
WHERE 1.5 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION

NOTE: THIS FIGURE SHOWS ORGANIC COMPOUND DETECTIONS (ONLY 99SY-A13e-S-1.5 WAS ANALYZED FOR ORGANICS, AS DESCRIBED IN SECTION 4.195.5), AS WELL AS METALS ABOVE SCREENING CRITERIA.

0 15 30 45
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 6/99
FN: 4.195-6
MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SAMPLING LOCATIONS AND RESULTS SUMMARY, FEBRUARY-MARCH 1999
AOC ADD 13
MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 104
GROUP B AREAS OF CONCERN

FIGURE
4.195-6

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction related projects.

4.196 MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 150 (AOC ADD 14)

A description of the mercury-sealed motor pump stand area at Building 150 (AOC ADD 14), the operational history and waste characteristics, PA resources used, and recommendations are presented in Sections 4.196.1 to 4.196.4. Based on PA recommendations, investigational sampling was performed for this AOC. The number of samples collected and analyses performed, analytical results, a comparison of analytical results to screening criteria, and a discussion of data validation and usability are also presented in this section.

AOC ADD 14 was not originally identified as a Group B AOC by the EBS in 1996. Instead, it is an additional AOC that was added to Group B based upon site walk observations by regulatory agencies on 20 January 1999.

4.196.1 Site Description

Table 4.196-1 summarizes the location and characteristics of AOC ADD 14. A site map is provided as Figure 4.196-1. Site photographs are shown in Figures 4.196-2 and 4.196-3.

Table 4.196-1
AOC ADD 14 Site Description

AOC No.	Location	Figure 1-3 Grid No.	Description	Structures	Dimensions
ADD 14	South of Building 150	F-35	Pump disassembly and service area for Drydock 1.	Pump stand and spill pans located on a concrete pad with berm.	Pump stand: approximately 25 feet high. Spill pan dimensions: approximately 4 feet by 4 feet by 6 inches Concrete pad: 20 feet by 20 feet with 8-inch high berm.

ADD = Additional AOC = Area of Concern No. = Number

During the 15 December 1998 site reconnaissance, the mercury-sealed motor pump stand area south of Building 150 was inspected. Six stands and pumps, as well as five spill pans, were still in place but no longer in use. The stands were installed on a concrete pad surrounded by an eight-inch high concrete berm. The concrete pad appeared to be in good condition. Sediment was observed at the floor surface of the bermed area. A sump was observed in the southwestern corner of the bermed area.

4.196.2 Operational History and Waste Characteristics

Table 4.196-2 summarizes the operational history and waste characteristics.

Table 4.196-2
AOC ADD 14 Operational History and Waste Characteristics

AOC No.	Years of Operation	Activities	Wastes	Quantity
ADD 15	1960s to 1990s	Disassembly and service of drydock pumps which contained mercury.	Mercury removed from the pumps was recycled.	Less than 5 pounds of mercury spilled per year.

ADD = Additional AOC = Area of Concern No. = Number

According to the 1983 IAS by NEESA, the pump stand located south of Building 150 was used to disassemble and service submersible pumps used to dewater Drydock 1. The 150-horsepower pumps, each containing approximately 18 pounds of mercury, were dismantled south of Building 150 (NEESA 1983), then sent to Public Works for repair. The mercury was removed, filtered, and returned to the pumps as part of an attempt to recycle mercury at LBNSY. Mercury recycling was reportedly practiced at the shipyard since 1967 and perhaps earlier (NEESA 1983). The pumps were then returned to the pump stands for final reassembly.

Spilled mercury was collected in the spill pan (called a sump in the 1983 IAS), but was reported to be less than 5 pounds of spilled mercury per year (NEESA 1983). Any spilled mercury was disposed of as hazardous waste (NEESA 1983).

4.196.3 Preliminary Assessment Resources

Table 4.196-3 summarizes the resources used and interviews conducted in the PA evaluation.

Table 4.196-3
AOC ADD 14 Preliminary Assessment Resources Summary

Resource	Date	Source	Summary
Initial Assessment Study	1983	NEESA	Describes Buildings 104 and 150 pump stand operations.
Navy Map Number 24446	1984	LBNSY-PW	Building 104 and 150 pump repair stands, mercury decontamination alterations.
Two-page Written Procedure for the Removal of Submersible Pumps	Unknown	LBNSY	Describes the pump service operations.
Personnel Interview	1998	Nunn, LBNSY	Described the AOC and its intended function.

ADD = Additional
AOC = Area of Concern
LBNSY-PW = Long Beach Naval Shipyard, Public Works
NEESA = Naval Energy and Environmental Support Activity

4.196.4 PA Recommendations

Investigational sampling was recommended to evaluate any residual mercury contamination in the surface sediment found within the berm and the spill pan. In addition, one sediment sample was recommended for collection from the storm water catch basin nearest to the pump stand to assess whether any mercury may have been carried by storm water from the pump stand to the storm drain system (CDM Federal 1999).

4.196.5 Number of Samples and Analyses

One sediment sample was collected as a composite sample from within the five spill pans (99SY-A14-S-0), one sample was collected from within the sump (99SY-A14b-S-1), and one sample was collected from the nearest catch basin (99SY-A14c-S-3) on 5 March 1999. Sampling locations are shown in Figure 4.196-4. The samples were analyzed for metals including mercury, as indicated in Table 4.196-4.

One additional sediment sample, 99SY-A14d-S-0, was not originally planned, but was collected because there was a low spot within the bermed area that had collected sediment.

Table 4.196-4
AOC ADD 14 Number of Samples and Analyses

Matrix	Metals
Sediment	4

ADD = Additional Area of Concern AOC = Area of Concern

4.196.6 Analytical Results

Analytical results are discussed below for the sediment samples. Metals results are summarized in Table 4.196-5 and Figure 4.196-4.

Fourteen of the 17 metals were detected in all four of the sediment samples collected at AOC ADD 14 as shown in Table 4.194-5. Mercury, the main metal of concern, was detected at a concentration of 4,370 mg/kg in the sump (sample 99SY-A14b-s-1). The mercury results from the remaining three sampling locations ranged from 121 mg/kg to 429 mg/kg. Certain other metals results were elevated and their concentrations are shown in Table 4.196-5 and summarized in Figure 4.196-4.

4.196.7 Data Comparison to Screening Criteria

In the spill pans (composite sample 99SY-A14a-S-0), no metals exceeded their respective industrial PRG and background levels. For hazardous waste characterization purposes, the concentrations of chromium, copper, lead, mercury, and zinc exceeded either federal or state screening criteria.

In the sump (sample 99SY-A14b-S-1), mercury (4,370 mg/kg), arsenic (23.1 J mg/kg), and lead (1040 J mg/kg) exceeded both their respective industrial PRG and background levels. For hazardous waste characterization purposes, the concentrations of mercury and lead, as well as chromium, copper, and zinc, exceeded either federal or state screening criteria.

In the storm drain catch basin (sample 99SY-A14c-S-3), arsenic exceeded its industrial PRG and background level. For hazardous waste characterization purposes, the concentrations of copper, lead, and mercury exceeded either federal or state screening criteria.

In the low spot within the berm (sample 99SY-A14d-S-0), lead exceeded its industrial PRG and background level. For hazardous waste characterization purposes, the concentrations of lead and mercury exceeded either federal or state screening criteria.

In one or more samples, antimony, cadmium, chromium, copper, lead, mercury, and/or nickel exceeded their respective residential PRG, but not their industrial PRG.

4.196.8 Data Validation and Usability

Field QC samples were collected as described in Section 3.5.1, laboratory QA was performed and monitored as described in Section 3.5.2, and data validation was performed for samples as described in Section 3.5.3. For this site, no sample data were rejected, and data qualifiers were applied to samples as described in Appendix O.

4.196.9 Recommendations

At the Mercury-Sealed Motor Pump Stand south of Building 150, the sediment located within spill pans, within the bermed area sump, within the bermed area, and within the nearby storm drain catch basin should be removed and disposed of as hazardous waste. Removal of sediment from the storm drain catch basin will be handled as part of a separate sediment removal project in 1999.

Table 4.196-5
AOC ADD 14 Sampling Results Summary for Metals
March 1999

SEDIMENT									
Analytical Parameter	**No. of Samples**	**No. of Detections**	**Concentration (mg/kg)**	**Industrial PRG[a] (mg/kg)**	**Background Level[b] (mg/kg)**	**No. of Detections above Industrial PRG and Background**	**State of California Regulatory Levels[d] (mg/kg)**	**U.S. EPA RCRA Criteria[d] (mg/kg)**	**No. of Detections Exceeding State or Federal Criteria**
Antimony	4	4	10.8, 13.1, 6.8, 165	750	11.3	0	500	NA	0
Arsenic	4	4	**13.3J, 23.1J, 20.0J**, 13.1J	3.0	17.5	2	500	100	0
Barium	4	4	629J, 1000J, 343J, 559J	100,000	275	0	10,000	2,000	0
Beryllium	4	0	ND	3,400	1.4	0	75	NA	0
Cadmium	4	4	11.8J, 16.0J, 2.4J, 7.0J	930	1.7	0	100	20	0
Chromium	4	4	179[c], 248[c], 86.1, 149[c]	450	60.9	0	2,500	100	3
Cobalt	4	4	26.0, 25.5, 15.8, 23.9	29,000	24.5	0	8,000	NA	0
Copper	4	4	3670[c], 3360[c], 3150[c], 1480	70,000	798.7	0	2,500	NA	3
Lead	4	4	746J[c], **1040J[c]**, 457J[c], **1090J[c]**	1000	185.2	2	1,000	100	4
Mercury	4	4	293[c], **4370[c]**, 429[c], 121[c]	560	2.5	1	20	4	4
Molybdenum	4	4	55.8, 84.2, 35.0, 36.4	9,400	NA	0	3,500	NA	0
Nickel	4	4	293J, 240J, 141J, 210J	37,000	32.6	0	2,000	NA	0
Selenium	4	0	ND	9,400	1.4	0	100	20	0
Silver	4	4	0.87, 8.1, 0.64, 2.0	9,400	1.5	0	500	100	0
Thallium	4	0	ND	150	4.2	0	700	N/A	0
Vanadium	4	4	50.1, 80.4, 26.1, 72.3	13,000	84.9	0	2,400	NA	0
Zinc	4	4	9500[c], 5180[c], 1510, 4560	100,000	844.9	0	5,000	NA	2

Notes:

(a) From U.S. EPA Region IX Preliminary Remediation Goals, dated May 1, 1998.
(b) Background levels are listed in Appendix L.
(c) Hazardous waste classification screening criteria (state or federal) were exceeded.
(d) See Section 3.7 for sources of criteria. 20 times U.S. EPA toxicity characteristic leaching procedure (TCLP) criteria used for soil.

Bold results indicate that industrial PRGs and background levels were exceeded.

ADD = Additional
AOC = Area of Concern
mg/kg = Milligrams Per Kilogram
mg/L = Milligrams Per Liter
ND = Not Detected
PRG = Preliminary Remediation Goal
U.S. EPA = United States Environmental Protection Agency

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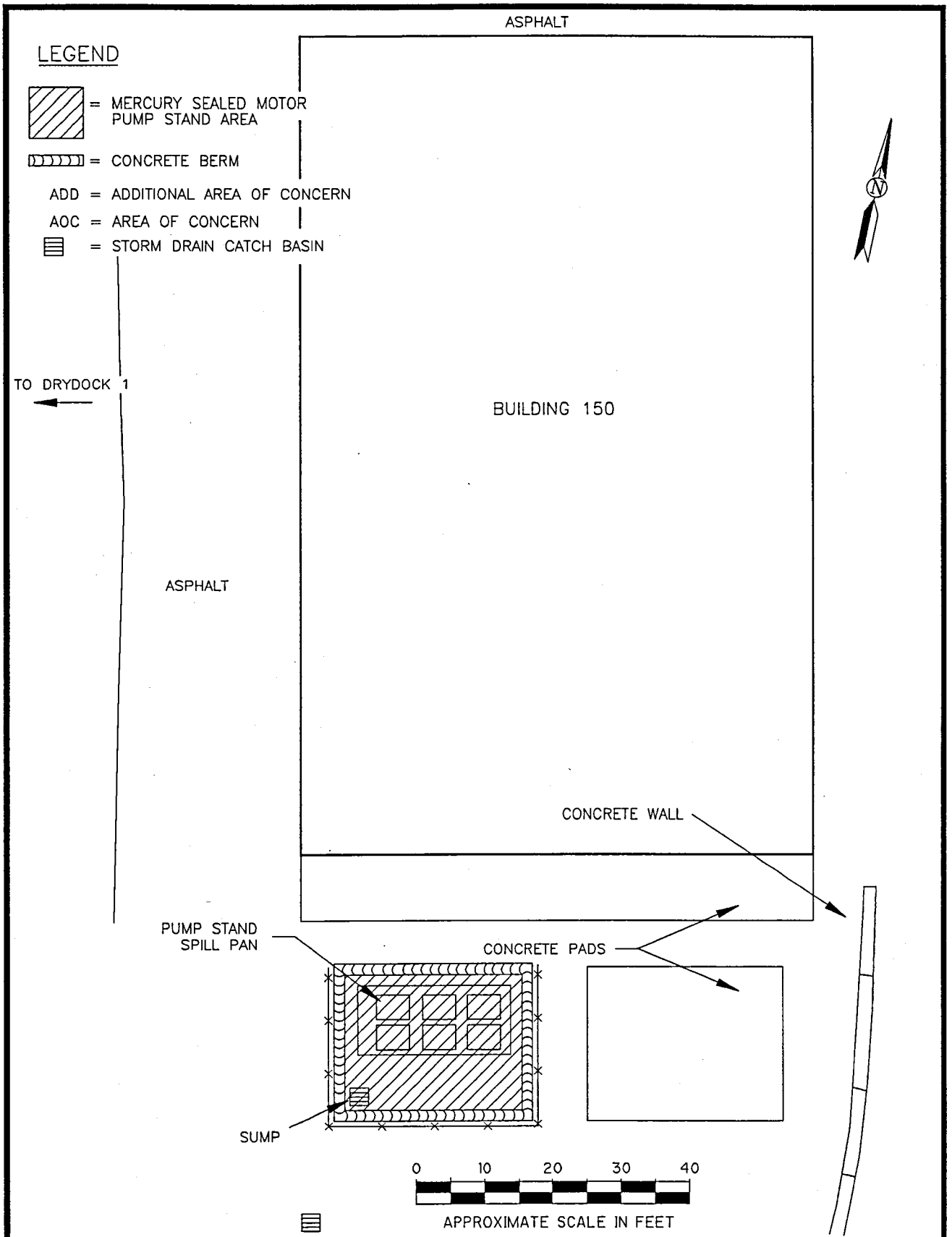

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA		AOC ADD 14 MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 150 GROUP B AREAS OF CONCERN	FIGURE 4.196-1
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc.	DATE: 5/99 FN: 4.196-1		
MODIFIED BY:	PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

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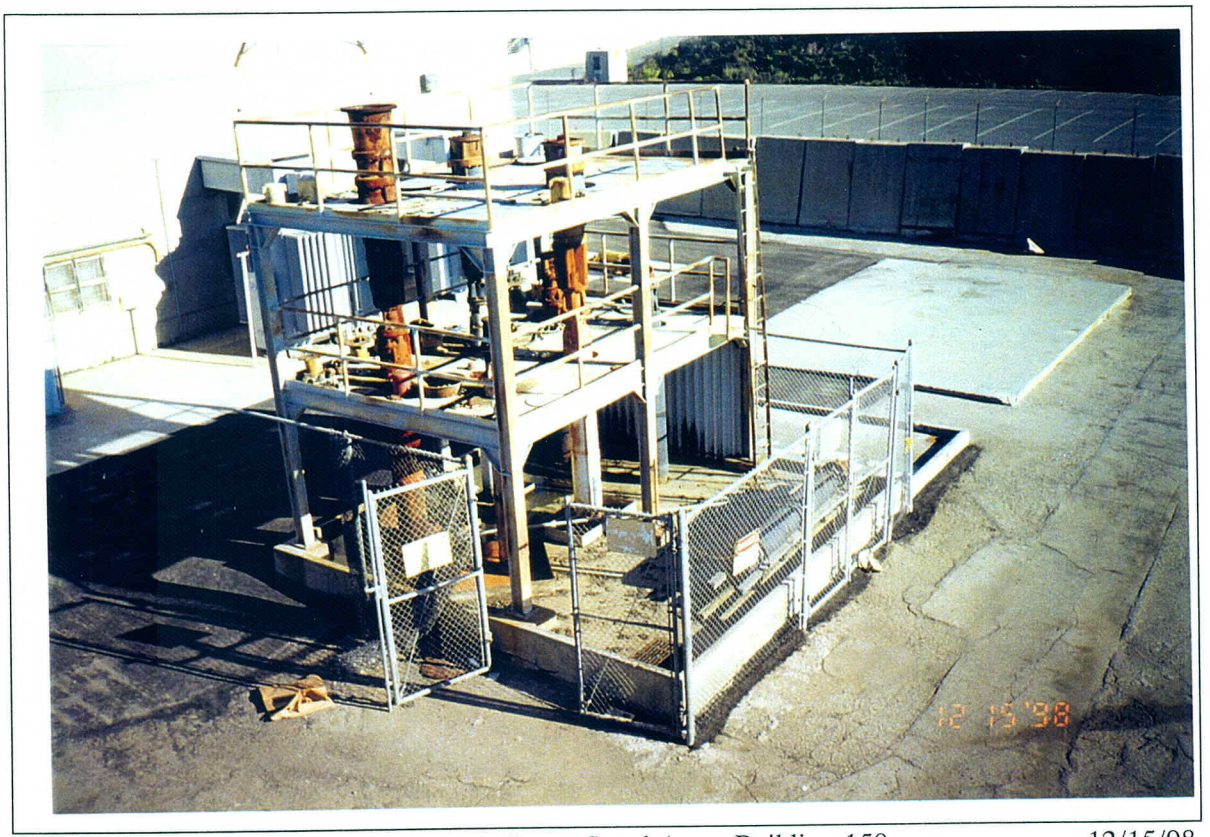


Figure 4.196-2 Mercury-Sealed Motor Pump Stand Area, Building 150 (AOC ADD 14) Facing Northeast 12/15/98

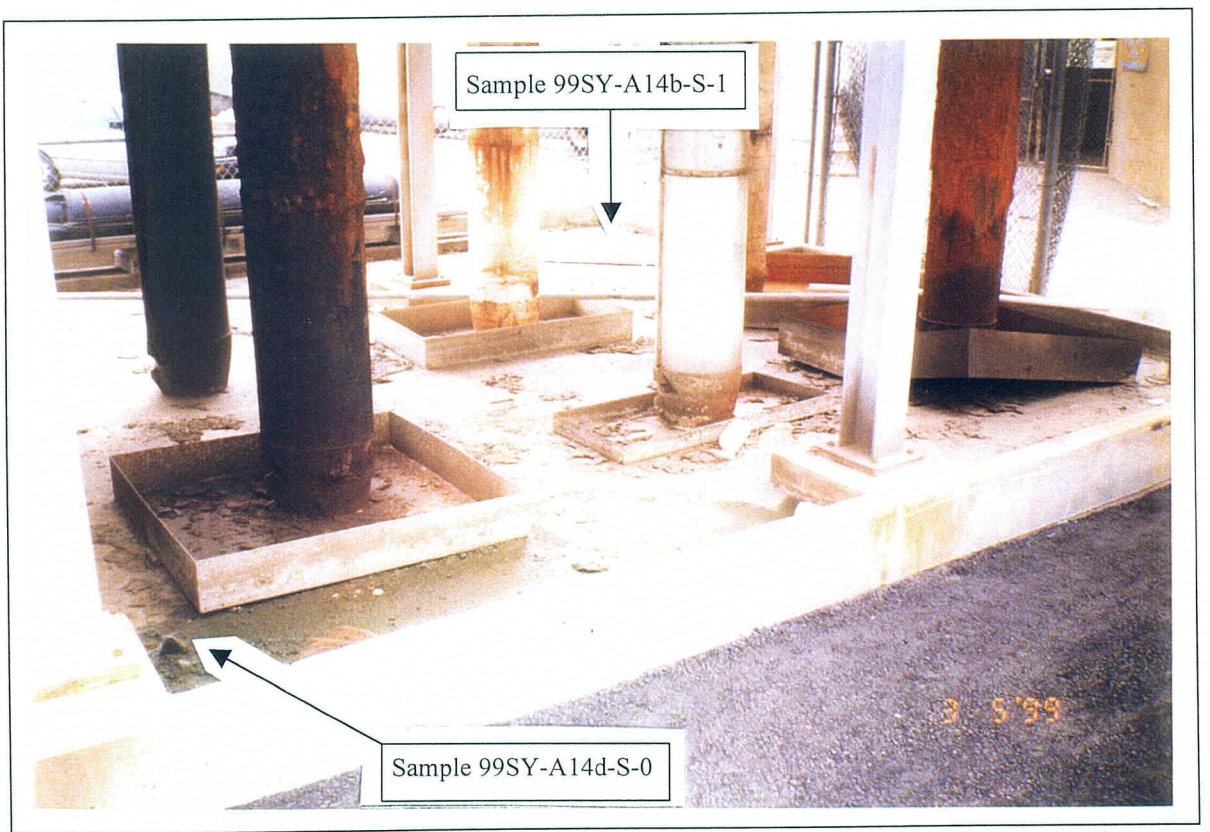


Figure 4.196-3 Spill Pans at Bottom of Pump Stands, Mercury-Sealed Motor Pump Stand Area, Building 150 (AOC ADD 14), Facing South 3/5/99

LEGEND

= MERCURY SEALED MOTOR PUMP STAND AREA

= CONCRETE BERM

ADD = ADDITIONAL AREA OF CONCERN
AOC = AREA OF CONCERN
PRG = PRELIMINARY REMEDIATION GOAL (INDUSTRIAL)
PCB = POLYCHLORINATED BIPHENYL
TPH = TOTAL PETROLEUM HYDROCARBONS
U.S. EPA = UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
TPH = TOTAL PETROLEUM HYDROCARBONS

= STORM DRAIN CATCH BASIN

= SEDIMENT SAMPLE LOCATION

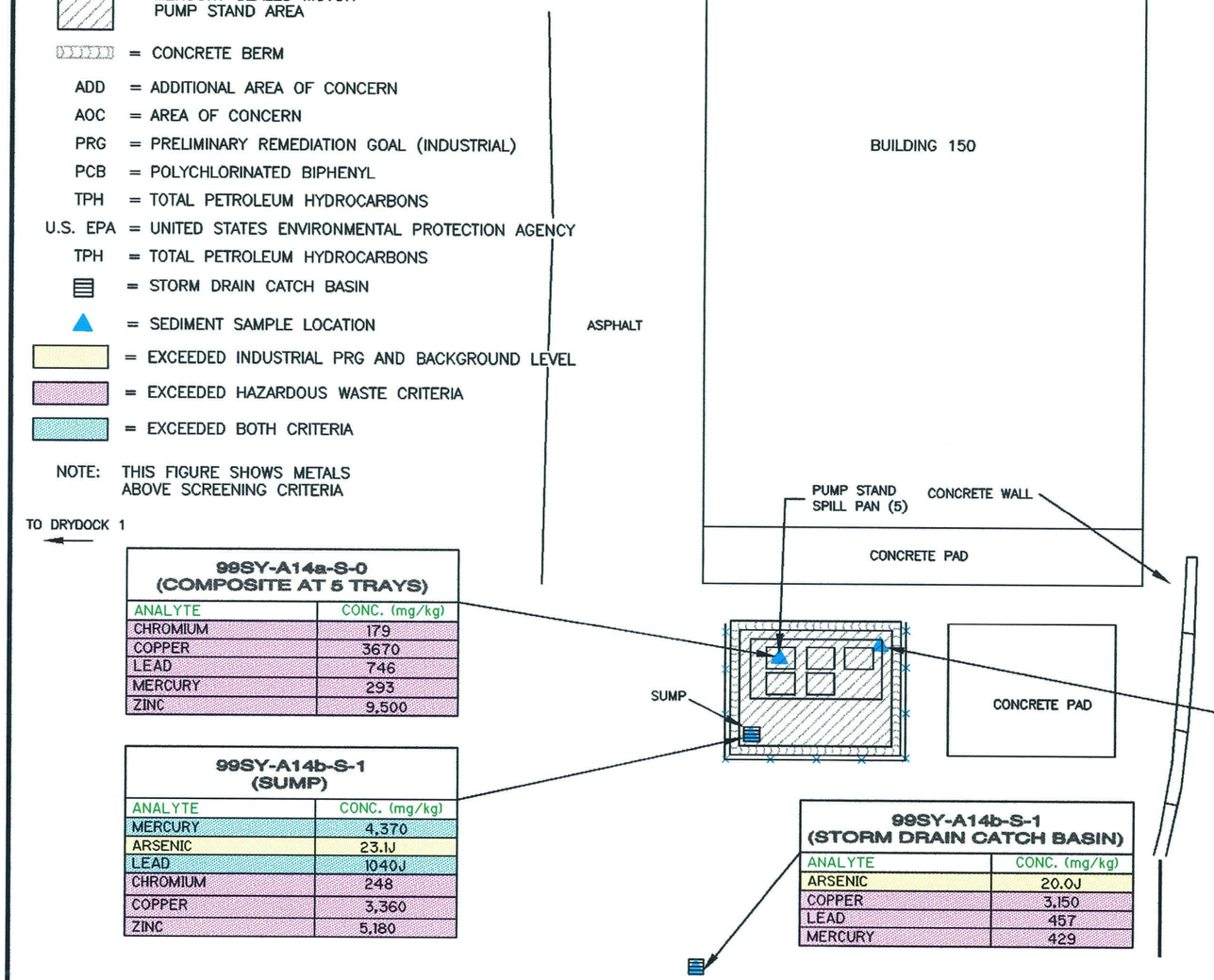
= EXCEEDED INDUSTRIAL PRG AND BACKGROUND LEVEL

= EXCEEDED HAZARDOUS WASTE CRITERIA

= EXCEEDED BOTH CRITERIA

NOTE: THIS FIGURE SHOWS METALS ABOVE SCREENING CRITERIA

TO DRYDOCK 1



99SY-A14a-S-0 (COMPOSITE AT 5 TRAYS)

ANALYTE	CONC. (mg/kg)
CHROMIUM	179
COPPER	3670
LEAD	746
MERCURY	293
ZINC	9,500

99SY-A14b-S-1 (SUMP)

ANALYTE	CONC. (mg/kg)
MERCURY	4,370
ARSENIC	23.1J
LEAD	1040J
CHROMIUM	248
COPPER	3,360
ZINC	5,180

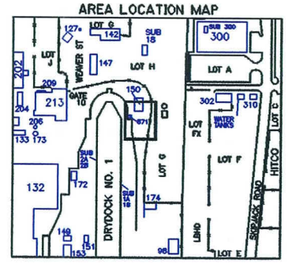
99SY-A14b-S-1 (STORM DRAIN CATCH BASIN)

ANALYTE	CONC. (mg/kg)
ARSENIC	20.0J
COPPER	3,150
LEAD	457
MERCURY	429

99SY-A14d-S-0 (LOW SPOT INSIDE BERM)

ANALYTE	CONC. (mg/kg)
LEAD	1,090J
CHROMIUM	149
MERCURY	121

AREA LOCATION MAP



99SY-A14a-S-0=SAMPLE NAME (TYPICAL)
WHERE S = SEDIMENT SAMPLE
WHERE 0 = DEPTH BELOW GROUND SURFACE (FEET)
mg/kg = MILLIGRAMS PER KILOGRAM
J = ESTIMATED CONCENTRATION
CONC. = CONCENTRATION

SCREENING CRITERIA (mg/kg)

	INDUSTRIAL PRG	BACKGROUND	STATE	U.S. EPA
MERCURY	560	2.5	20	4
ARSENIC	3.0	17.5	500	100
CHROMIUM	450	60.9	2,500	100
COPPER	70,000	789.7	2,500	NA
LEAD	1,000	185.2	1,000	100
ZINC	100,000	844.9	5,000	NA

NOTES: NA = NOT AVAILABLE

0 10 20 30 40
APPROXIMATE SCALE IN FEET

LONG BEACH NAVAL SHIPYARD LONG BEACH, CALIFORNIA	SAMPLING LOCATIONS AND RESULTS SUMMARY, MARCH 1999 AOC ADD 14 MERCURY-SEALED MOTOR PUMP STAND AREA, BUILDING 150 GROUP B AREAS OF CONCERN	FIGURE 4.196-4
CDM Federal Programs Corporation A Subsidiary Of Camp Dresser & McKee Inc. DATE: 6/99 FN: 4.196-4		
MODIFIED BY: PROJECT NO. 6210-014		

DISCLAIMER: Figure scale is provided for general location purposes only and is not intended for construction-related projects.

5.0 CONCLUSIONS AND RECOMMENDATIONS

For each of the 171 AOCs, Table 5-1 summarizes the PA findings and conclusions presented in Section 4.0 and, based on comparison of the sampling data to screening criteria, presents recommendations (for further action or no further action).

Figure 5-1 shows the recommendations for the 171 AOCs in terms of specific actions or no further action.

- A total of 126 AOCs are recommended for no further action based on information from the PA investigation. The AOCs recommended for no further action comprise all 100 SAPs, four SSS AOCs, eight HWFs, the former incinerator at Building 163, two reported plate abrasive blasting locations, the concrete block floors at Building 130, the removed PCB equipment at Building 132, six UST sites, a can crushing unit, coolant recovery tanks at Building 132; a sandblast grit pit/conveyor system at Building 173, and mercury manometers.

- Ten AOCs have been placed into the existing Compliance Program. Two of these nine AOCs consist of sites awaiting regulatory approval for closure:

  - Building 314 TSDF (AOC HWF 2); and
  - BOWTS (AOC IWS 3).

  The other eight AOCs that will be addressed in the Compliance Program and for which action is planned in 1999 and 2000 are the following:

  - Building 118 TSDF (AOC HWF 1);
  - IWTP and pipelines (AOCs IWS 2 and IWS 1, respectively);
  - Liquid Industrial Waste (LIW) Tanks (AOC IWS 4);
  - Three OWSs (AOCs IWS 5, IWS 6, and IWS 7), and
  - The Shipyard Gasoline Station (AOC MISC 7).

- A total of 35 AOCs were recommended for sampling for various reasons including evidence of leaks, spills, or staining of the floor; the types and amounts of hazardous materials/waste used in operations; and/or insufficient information about the operations conducted.

The findings and recommendations based on the sampling and analysis conducted at these 35 AOCs are as follows:

- No further action is recommended at 27 of the 35 AOCs because no sampling results exceeded screening criteria (it should be noted that residential as well as industrial PRGs were not exceeded); and

- Two AOCs will be addressed in the Compliance Program (AOCs UST 2 and MISC 8).

Of the six AOCs requiring further action, the recommendations are as follows:

Dispose of Soil/Sediment as Hazardous Waste

- Surface soil in the Building 128 Dirt Floor area (AOC MISC 5) contained three metals (arsenic, chromium, and lead) above soil industrial PRGs and background levels, so the soil should be removed and disposed as hazardous waste. A dirt floor sample collected in this area as part of the investigation of quench tanks (AOC PT 10) identified dioxins and furans above the industrial PRG. The dirt floor in this area is approximately 4 inches thick; approximately 40 cubic yards of surface soil exist in the heat treatment/forging dirt floor area.
- Soil beneath a cooling platform (sampled as part of AOC MISC 1) twenty feet west of the heat treatment/forging dirt floor area also exceeded soil industrial PRGs and background levels for two metals (arsenic and chromium) and should be disposed of as hazardous waste.
- Further Action is recommended for the Mercury Pump Stand location south of Building 104 (AOC ADD 13). The sediment located within the spill pan, the bermed area sump (including associated liquid), and the nearby storm drain catch basin should be removed and disposed of as hazardous waste.
- Further Action is recommended for the Mercury Pump Stand location south of Building 150 (AOC ADD 14). The sediment located within the spill pans, the bermed area and sump (sediment and associated liquid), and the nearby storm drain catch basin should be removed and disposed of as hazardous waste.

Dispose of Liquid as Hazardous Waste

- Liquid waste at the Building 210 Plating Shop (AOC PT 1) is considered hazardous because of its concentration of the chlorinated solvent carbon tetrachloride and should be pumped out and disposed as hazardous waste. This liquid waste is situated below the concrete floor of the Plating Shop but above the concrete floor of the ventilation duct system. Because it is possible that the concrete floor might have absorbed contaminants, any future deconstruction activities that involve removal of the concrete floor should take this into consideration.

Perform Site Characterization

- Further Action in the form of additional site characterization is recommended at the Building 128 quench tanks (AOC PT 10) because of the detection of mercury and BEHP in groundwater above screening criteria.

  The exact source of BEHP from quench oil tank processes is unknown. SVOC analysis was performed to detect PAHs associated with quench oils, not because phthalates were expected (there are no records indicating the use or generation of phthalates). BEHP is a common laboratory contaminant, but typically not at the concentration reported in one groundwater sample at this AOC (0.110 mg/L compared to the Ocean Plan criterion of 0.0035 mg/L). Further site characterization is recommended, consisting of collection and analysis of four groundwater samples via direct push sampling, one approximately 5 to 10 feet away in each of the four directions from the previous sampling location. Soil samples should be collected at each groundwater sampling location at a depth of five feet below ground surface. Samples should be analyzed for mercury and SVOCs.

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Table 5-1
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
Note: Site Numbers 1 to 25 were addressed in previous PA and Sampling Reports (CDM Federal 1998b, 1998d).					
26	Sewer Pit H (AOC SSS 2) North of Building 100	Personnel interviews and documents reviewed indicate that hazardous and toxic wastes, as well as sewage, were disposed of in the sanitary sewer system throughout the history of LBNSY. The sewer pits acted as lift and pumping stations, moving wastes from the gravity lines to the force main lines. The sewer pits were cleaned out annually, but no reports of structural inspections were found. No further action is recommended for AOCs SSS 2, SSS 3, and SSS 4 because no spills, leaks, or problems were reported, the structures are made of concrete and no cracks or holes were observed, and the sewer pits were cleaned out annually.	None	NA	No Further Action
27	Sewer Pit B (AOC SSS 3) Building 115				
28	Sewer Pit G (AOC SSS 4) North of Building 127				
29	Sewage Holding Tanks near Building 207 (AOC SSS 5)	The holding tanks, located underground, were observed during the site reconnaissance via manholes. No cracks or structural damage were observed or have been reported. Personnel interviews and documents indicate that hazardous and toxic wastes, as well as sewage, were disposed of in the sanitary sewer system throughout the history of LBNSY. The holding tanks were cleaned out annually, but no reports of structural inspections were found. No further action is recommended for AOC SSS 5 because no spills, leaks, or problems were reported, the structure is made of concrete and no cracks or holes were observed in the tanks, and the tanks were cleaned out annually.	None	NA	No Further Action
30	Former Treatment, Storage, and Disposal Facility, Building 118 (AOC HWF 1)	This AOC was used for hazardous waste storage and transfer from approximately 1980 to 1990. Materials stored at this AOC include paints, resins, PCBs, petroleum products, coolants, coatings, metals, pesticides, containers, caustics, acids, and other miscellaneous wastes. Wastes were properly contained within concrete berms under a corrugated roof. Minor staining and cracking was observed on the asphalt surrounding the building. This AOC is being closed according to the RCRA closure plan under another project. No further action is recommended for AOC HWF 1 under the AOC investigation project because the TSDF has a RCRA closure plan and closure has already been initiated under another project contracted out by the Navy to a subcontractor. A letter was sent to DTSC requesting approval for final closure in 1996. DTSC responded that closure could not be approved without data on the groundwater beneath Building 118. In June 1999, the Navy completed groundwater sampling as part of the closure process. The sampling report was issued in December 1999 and is undergoing regulatory review.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing Compliance Program.
31	Treatment, Storage, and Disposal Facility, Building 314 (AOC HWF 2)	This AOC was used for hazardous waste storage and transfer from approximately 1990 to 1997. Wastes stored at this AOC include paints, solvents, resins, PCBs, oils, coolants, coatings, metals, pesticides, containers, acids, and other miscellaneous wastes. Wastes were properly contained within concrete berms within Building 314. This AOC is being closed according to the RCRA closure plan under another project. No further action is recommended for AOC HWF 2 under the AOC Investigation project because closure has already been initiated under another project. The RCRA closure plan was approved by DTSC in 1996. Soil sampling has been completed and the results and closure certification report were sent to DTSC in 1998. The Navy will complete a human health risk assessment using an industrial scenario to complete the closure documentation. Closure of the facility is anticipated in 2000.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
LESS THAN 90-DAY HAZARDOUS WASTE FACILITIES					
32	Building 54 (AOC HWF 4)	Six Less than 90-day Hazardous Waste Facilities (AOCs HWF 4, 6, 7, 9, 10, and 12) and one Less than 180-day HWF (AOC HWF 13) were used for storing various hazardous wastes generated during LBNSY operations. Wastes were properly stored in the 1990s, and at some HWFs since 1980, within roofed areas surrounded by chain-link fences with lockable gates. No further action is recommended for AOCs HWF 4, 6, 7, 9, 10, 12, and 13 because wastes were stored using proper secondary containment, no problems were noted during weekly inspections by LBNSY-ED, HWFs were cleaned and closed according to LBNSY-ED procedures, and no significant ground staining was observed.	None	NA	No Further Action
33	Building 311 (AOC HWF 6)				
34	Building 452 (AOC HWF 7)				
35	Building 454 (AOC HWF 9)				
36	Building 455 (AOC HWF 10)				
37	Building 886 (AOC HWF 12)				
38	Less Than 180-Day HWF, Building 54 (AOC HWF 13)				
39	Former and Current Oil Production Area (AOC HIST 1)	This AOC consists of the eastern portion of LBNSY property (Pier E) that has been used for oil production beginning in approximately 1950. Ownership of Pier E reverted to the City of Long Beach in 1998. The exact number and locations of all oil wells, tank systems, and pipelines drilled and constructed on Pier E are not known because of incomplete recordkeeping. A set of 1992 well location maps maintained by Tidelands Oil Production Company, which currently operates and maintains the few remaining oil wells on Pier E, showed 14 producing oil wells and another 97 abandoned oil wells. The wells are owned by the City of Long Beach and operated by a contractor, Tidelands Oil Production Company. Sampling was recommended for AOC HIST 1 because of the number of years of operation, the inadequate records (maps and spill history), the likelihood of leaks in oil pipelines, and the likelihood of oil spills during normal operations. Soil and groundwater sampling were recommended on Pier E at locations along abandoned and active pipelines and near active wells where there may have been leaks.	10 soil and 10 groundwater samples for VOCs, SVOCs, TPH, and metals	**Soil Samples:** SVOCs, TPH-diesel, TPH-motor oil, and 14 of the 17 metals were detected in at least one sample. Only two SVOCs (benzo(a)pyrene and benzo(b)fluoranthene), and lead were detected above their respective screening criteria, in soil sample 99SY-HI1g-S-5. **Groundwater Samples:** SVOCs, TPH-diesel, TPH-gasoline, and 14 of the 17 metals were detected in at least one sample. No analytes exceeded screening criteria. BEHP was detected above the screening criteria in two groundwater samples. Laboratory contamination is suspected.	No Further Action for the Navy because the City of Long Beach owns the oil wells that may have impacted soil and groundwater. Any further actions regarding the oil field production areas are the responsibility of the City of Long Beach.
40	Acetylene Generating Plant and Sludge Pit (AOC HIST 2)	This AOC consists of an acetylene generating plant at Building 51, located west of Building 54, which was built in 1944 and removed in 1955. A sludge pit was located west of Building 54 and is suspected to have been used to temporarily contain byproducts (lime slurry) from the acetylene generating process. It is suspected that the sludge was treated by reducing the pH and was then released to the sanitary sewer. Approximately 90 to 150 gallons of sludge were discharged to the sanitary sewer daily. Further action, including soil and groundwater sampling, was recommended for AOC HIST 2 because wastes with a high pH were discharged directly into a pit.	1 soil and 1 groundwater sample for pH	**Soil Sample:** The soil pH result was 8.62. **Groundwater Sample:** The groundwater pH result was 7.65. No results were outside the Ocean Plan screening criteria range of 6.0 to 9.0 pH units.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
41	Former Incinerator, Building 163 (AOC HIST 4)	This AOC consists of an incinerator and an associated smoke stack located northeast of Drydock 1. The incinerator was used from approximately 1944 to 1960 for the incineration of nontoxic materials such as confidential paperwork. Historical photographs (see Section 4.41) show the construction and demolition of the AOC. No further action is recommended for AOC HIST 4 because it was used to incinerate only nonhazardous materials, the ash was properly disposed of, and the site area was paved.	None	NA	No Further Action
42	Plate Abrasive Blasting, Former Building 125 (AOC HIST 6)	Abrasive blasting operations at this AOC were incorrectly identified as operations conducted at Building 125. (The sandblasting operations in this area, north of Building 129, were conducted at Building 216, and were investigated as AOC UST 2 [see Section 4.176]). No further action is recommended because no sandblasting had occurred, hazardous materials were not used, and hazardous wastes were not generated at this AOC.	None	NA	No Further Action
43	Plate Abrasive Blasting (AOC HIST 7)	This AOC was incorrectly identified as a historical sandblasting area at Building 125. (The sandblasting operations in this area were conducted at Building 216, and were investigated as AOC UST 2 [see Section 4.176]). No further action is recommended because no sandblasting had occurred, hazardous materials were not used, and hazardous wastes were not generated at this AOC.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
44	Chemical Cleaning Area (AOC HIST 8) Southwest of Building 128	AOC HIST 8, a chemical cleaning area, was located at a former shed at the southeastern corner of former Building 102 (southwest of Building 128). The area is now paved over with asphalt and there is no structural evidence of Building 102 or the associated chemical cleaning shed. AOC HIST 8 was used for pump and hose cleaning operations using detergents and possibly solvents from the 1960s to early 1990s. Sampling was recommended for AOC HIST 8 because of the unknowns associated with this building and the potential for solvent use typical of pre-1990 cleaning operations.	3 soil and 3 groundwater samples for VOCs, SVOCs, metals, PCBs, pH, and TPH	**Soil Samples:** No VOCs or SVOCs were detected. TPH-diesel and TPH-motor oil were detected in all three samples, and PCBs were detected in sample 99SY-HI8a-S-1, but none exceeded screening criteria. Thirteen of 17 metals were detected in at least one of the soil samples, but none exceeded screening criteria.	No Further Action
				Groundwater Samples: Methyl tertiary butyl ether (MTBE) was detected in all three samples above screening criteria and the pH for groundwater sample 99SY-HI8a-W-11.4 was 5.44, outside the criteria range of 6.0 to 9.0. This sample was surrounded by samples collected during previous investigations that had pH values between 6.0 and 9.0. The VOC TCE was detected in two samples, the SVOC butyl benzyl phthalate was detected in one sample, TPH-diesel was detected in all three samples, and eight of 17 metals were detected in at least one of the samples; however, none exceeded screening criteria. TPH-motor oil and PCBs were not detected.	No Further Action is recommended for AOC HIST 8 under the AOC Investigation because the MTBE detected in groundwater beneath the Chemical Cleaning Area is being investigated as part of an investigation at the Shipyard Gasoline Station, which is the source of MTBE.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
45	Storage Area for Scrap Metal and Oils (AOC HIST 9) Southwestern Corner of Building 132	This AOC is a former storage area located outside of the southwestern corner of Building 132 and was used primarily to store a variety of metal stock. Several bins of scrap metal existed in the area from 1970 to 1975. Metal cutting operations using acetylene torches may have also occurred because of reports of metal slag on the ground. No metal storage activities were observed during the PA site reconnaissance. The area is currently paved with asphalt and no signs of staining were observed. Sampling was recommended for AOC HIST 9 because of the lack of information concerning the storage area and the possibility of oil storage and associated spills.	2 soil and 2 groundwater samples for SVOCs, metals, and TPH	**Soil Samples:** No VOCs, SVOCs or PCBs were detected in the soil samples. TPH-diesel and TPH-motor oil were detected in at least one sample, and twelve of the 17 metals were detected in the soil samples, but none exceeded screening criteria. **Groundwater Samples:** No VOCs, TPH-diesel, TPH-motor oil, and PCBs were detected in the soil samples. The SVOC BEHP was detected in sample 99SY-HI9a-W-5. Two of the 17 metals were detected in the groundwater samples. No analytes exceeded screening criteria.	No Further Action
46	Industrial Wastewater Pipelines System (AOC IWS 1)	AOC IWS 1 consists of a set of subsurface and aboveground pipelines used to transfer liquid industrial waste (LIW) to the Industrial Wastewater Treatment Plant (IWTP). The pipelines were originally built to transfer wastes from Buildings 132, 205, 210 and the LIW tanks to the IWTP located at Building 108. The IWTP pipelines were used from 1986 to 1997 at varying frequency for the collection of waste plating solutions, wastewater, and LIW. Leaks reportedly occurred where the PVC pipe attaches to the Number 3 processing tank at the IWTP. An additional pipeline leak was discovered in 1993 approximately 100 feet west of Drydock 1. LBNSY personnel also identified that several of the pipelines have crystallized residues of sodium hydroxide in them. No further action is recommended for AOC IWS 1 under the AOC Investigation project. However, further action such as decontamination and/or sampling may be conducted under the existing Compliance Program.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing Compliance Program.
47	Industrial Wastewater Treatment Plant (AOC IWS 2) Building 108	The Industrial Wastewater Treatment Plant (IWTP), Building 108, was constructed in 1986 and operated from 1990 until operational closure at LBNSY in 1996. The major sources of wastewater were the plating shop facility in Building 210 (see Section 4.65) and the pipe and copper shop (and possibly the cleaning facility) at Building 132 (see Sections 4.50 and 4.68). Pipelines were later connected to the Liquid Industrial Waste (LIW) tanks (see Section 4.49). No further action is recommended for AOC IWS 2 under the AOC Investigation project. However, further action such as decontamination and soil and groundwater sampling at the IWTP will be conducted under the existing Compliance Program at LBNC. A contractor is currently implementing closure procedures for the IWTP. The contractor will work with the Navy and regulatory agencies to complete the closure of the IWTP in 2000.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
48	Bilge and Oily Wastewater Treatment System (BOWTS) (AOC IWS 3)	AOC IWS 3 is located south of Building 132, next to Pier 1 near the harbor. The BOWTS consists of nine tanks. All but one tank (a 23,600-gallon effluent holding tank) are surrounded by a berm. No signs of leaks or spills were found during a facility inspection in 1996 or the 1998 site reconnaissance and the LBNSY spill log does not list any spills at the BOWTS. The BOWTS was permitted as fixed treatment unit (FTU) 06 under the Tiered Permit Program. The wastewater was treated at the BOWTS using phase separation in a coalescing plate OWS to remove oil, then induced air flotation to precipitate metal hydroxides. The facility treated approximately 900,000 to 1,200,000 gallons per month that were released to the sanitary sewer. If the wastewater was determined not to meet the industrial wastewater discharge limits, it was either recirculated through the system or pumped to a Baker tank and transported to the IWTP. Recovered oil was transported offsite for recycling. No further action is recommended for AOC IWS 2 under the AOC Investigation project for several reasons. The facility is less than five years old and was built with containment to prevent release of wastes; the facility was conditionally authorized by DTSC; the equipment was triple-rinsed after removing the hazardous materials; the tanks were not open-topped; and records show no spills at the site. Closure of AOC IWS 3 as an FTU will be performed under the Compliance Program. The Navy submitted a letter requesting closure under the Tiered Permitting Program on 3 April 1998 and the Navy is awaiting DTSC response.	None	NA	No Further Action under the AOC Investigation project, but Further Action involving closure will be performed under the existing Compliance Program.
49	Liquid Industrial Waste (LIW) Tanks (AOC IWS 4)	LBNSY has two sets of LIW tanks, one located west of Drydock 1 and the other located between Drydocks 2 and 3. Each facility consists of a set of three storage tanks, a clarifier, and a mixer surrounded by a 3-foot-high concrete berm. The LBNSY spill log does not list any spills at either LIW tank location. AOC IWS 4 LIW tanks were permitted as FTU 09 (west of Drydock 1) and FTU 10 (between Drydocks 2 and 3) under the Tiered Permit Program. The LIW tanks treated wastewater containing sandblast grit and paints from washdown of drydocks and seepage water from drydock floors and walls. If sampled wastewater met the industrial wastewater NPDES discharge limits, it was discharged to the sanitary sewer via one of the two 6-inch diameter PVC pipes. If the wastewater did not meet NPDES limits, it was directly piped to the IWTP for further treatment. Sludge waste was dried and hauled offsite. FTU 09 (Drydock 1) treated approximately 165,000 gallons of wastewater per month, while FTU 10 (Drydocks 2 & 3) treated approximately 420,000 gallons of wastewater per month. No further action is recommended for AOC IWS 2 under the AOC Investigation project for several reasons. The facility is less than five years old; the facility was built with containment berms to prevent release of wastes; the facility was conditionally authorized by DTSC; the inside of the tanks and pipes were triple-rinsed after removing the wastes; the records show no spills at the site; and DTSC, U.S. EPA, and RWQCB representatives agreed during a 22 September 1998 site walk that no sampling was required as long as a sump within the berm did not discharge wastes via any surface pipes (this was subsequently verified).	None	NA	No Further Action under the AOC Investigation project, but Further Action (capping the pipelines connecting the LIW tanks to both the IWTP and sanitary sewer) will be performed under the existing Compliance Program.
50	Oil/Water Separator and Clarifier and Tanks, Building 132 (AOC IWS 5)	AOC IWS 5 consists of two OWS units, a clarifier, and a diversion tank located underground on the eastern side of Building 132. Sources of wastes that drained to these tanks included the Building 132 Pipe and Copper Shop, tin dip tanks, cleaning facility, and boiler room. During the 1998 site reconnaissance, each tank was full of liquid with a slight oil sheen on the surface. Samples were collected from three of the tanks in late 1996 as part of a separate study; trace amounts of VOCs and SVOCs were present, and all metals were below background levels. No further action is recommended for AOC IWS 5 under the AOC Investigation project because closure is being handled under the existing Compliance Program. The OWS, clarifier, and diversion tank were removed in 1999 and the closure report submitted in December 1999 is undergoing regulatory review.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
51	Oil/Water Separator and Clarifier Building 54 (AOC IWS 6)	The OWS and clarifier units with associated with Building 54 (AOC IWS 6) are located beneath a vehicle wash platform immediately west of Building 54. AOC IWS 6 was permitted as FTU 07 under the Tiered Permit Program. During hand-washing of vehicles from 1963 to 1996, rinse water entered the drain pit and drained into the OWS. Oil and sediment were separated from the wastewater by gravity settling and baffles and were housed in a drain sump (grease trap). The estimated monthly volume of wastewater treated varied from 2,000 to 50,000 gallons over time. No further action is recommended for AOC IWS 7 under the AOC Investigation project because closure is being handled under the existing UST Compliance Program. Both the OWS and clarifier were removed in 1999 and the closure report is undergoing regulatory review.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing UST Compliance Program.
52	Oil/Water Separator and Clarifier Building 210 (AOC IWS 7)	AOC IWS 7 consists of two OWS and clarifier units located on the eastern side of Building 210. One OWS was used to treat oily wastewater generated from electrical motor steam-cleaning operations, while the other was used to treat unknown wastes. The two OWS units contained liquid during the March 1998 site reconnaissance. No further action is recommended for AOC IWS 7 under the AOC Investigation project because closure is being handled under the existing UST Compliance Program.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing UST Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
53	Wood Block Floors, Building 128 (AOC MISC 1)	This AOC consists of wood block floors located throughout the central and northeastern portions of Building 128. Hazardous materials used and wastes generated at Building 128 include (1) oils (some possibly containing PCBs), oil/water mixtures, greases, and diesel fuel; (2) degreasing solvents; and (3) paints, sandblasting grit, glass beads, and slag waste containing heavy metals. As part of the 1998 site reconnaissance, Building 128 wood block floors were inspected, and dark stains were observed at numerous locations throughout the building. In addition, wood blocks were lifted at 21 various locations to observe the surface beneath. In each case, concrete was observed beneath the wood blocks. Wood block sampling was recommended for the AOC MISC 1 because stains observed on the wood block floors. In addition to the wood blocks, the following areas were sampled based on regulatory agencies' recommendations made on 15 April 1998 and on PA information: (1) surface soil located beneath a cooling platform in the north-central portion of Building 128; (2) liquid observed in a sump between three metal cleaning tanks in the northwestern part of Building 128, as well as soil and groundwater near the tanks; and (3) oil that had leaked from a machine located in the western part of Building 128.	1 wood block sample: VOCs, SVOCs, metals, PCBs, cyanide, and TPH	**Wood block sample:** VOCs, SVOCs, PCBs, TPH and 15 of the 17 metals were detected. Chromium and lead exceeded the 20-times RCRA TCLP criteria.	No Further Action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall. Based on sampling results, the wood block floors could be considered a hazardous waste if removed from their current location.
			1 surface soil sample: VOCs, SVOCs, metals, PCBs, and TPH.	**Surface soil sample:** SVOCs, TPH, and 15 of the 17 metals were detected. No sample analyte results for organic compounds exceeded screening criteria. Two metals, arsenic and chromium, exceeded screening criteria.	Further Action is recommended for soil beneath the cooling platform. Soil should be removed and disposed as hazardous waste as part of AOC MISC 5 (Section 4.57 of this report).
			1 liquid sample: VOCs, SVOCs, metals, PCBs, CN, TPH, pH, and Cr^{+6}	**Liquid sample:** 3 chlorinated VOCs, TPH, and 8 of the 17 metals were detected. No sample analyte results exceeded screening criteria.	No Further Action is recommended at the cleaning dip tanks.
			2 soil and 2 groundwater samples: VOCs and metals.	**Soil and groundwater:** No VOCs were detected and no metals exceeded screening criteria.	No Further Action is recommended at the cleaning dip tanks.
			1 wipe sample: PCBs	**PCB wipe sample:** PCBs were not detected.	No Further Action is recommended for the area associated with the PCB wipe sample.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
54	Wood Block Floors, Building 129 (AOC MISC 2)	AOC MISC 2 consists of wood block floors located throughout Building 129. Building 129 operations generated waste oils, greases, degreasers and solvents used for degreasing and paint removal. During this time, spills from process tanks, overflow from waste trenches, and trench-cleaning activities inside Building 129 may have impacted the wood block floors. During the 1998 site reconnaissance, many wood blocks appeared to be stained. To assess site conditions beneath the wood blocks, wood blocks were lifted at 21 various locations. In each case, concrete was observed beneath the wood blocks. Wood block sampling was recommended for AOC MISC 2 because stains were observed on wood block floors.	1 wood block sample: VOCs, SVOCs, metals, PCBs, CN, and TPH	**Wood block sample:** VOCs, SVOCs, PCBs, TPH, and 15 of the 17 metals were detected in the wood block sample. No screening criteria were exceeded; however, the wood blocks were stained similarly to wood blocks from Buildings 128 and 132 that were characterized as hazardous (see Numbers 53 and 56).	No Further Action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall. Based on sampling results, the wood block floors could be considered a hazardous waste if removed from their current location.
55	Concrete Block Floors, Building 130 (AOC MISC 3)	AOC MISC 3 consists of sealed-concrete block floors located throughout Building 130. Building 130 was used from 1945 to 1996 for fabrication and repair of ship heating, air-conditioning, and ventilation ductwork, as well as general sheet metal cutting and fabrication operations. No further action is recommended for AOC MISC 3 because six holes were cored through the concrete floor and all showed floor concrete thickness of 8 to 12 inches. The regulatory agencies had agreed that, if the concrete floor was found to be more than 6 inches thick, the likelihood of any spilled liquids to have migrated through the concrete would be considered low; therefore, the regulatory agencies did not require soil and groundwater sampling beneath Building 130 concrete floors.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
56	Wood Block Floors at Building 132 (AOC MISC 4)	AOC MISC 4 consists of wood block floors throughout the central and western portion of Building 132. Operations in Building 132 involved the use and temporary storage of hazardous materials throughout the building. Some of the wastes generated at Building 132 were grease, oily rags and absorbent material, waste oil, sandblast grit, glass bead dust, aluminum oxide dust, hydrochloric acid, caustic soda, chromic acid, rust prevention fluids, brazing flux, TCE, and asbestos construction material. Building 132 machinery also used oils and hydraulic fluids that were stored in USTs outside Building 132. As part of the 1998 site reconnaissance, Building 132 wood block floors were observed to have dark stains at numerous locations throughout the building. Wood blocks were lifted at 32 locations in April 1998 to observe the surface beneath. In each case, concrete was observed beneath the wood blocks. Investigational sampling was recommended for AOC MISC 4 because the wood block floors were stained. In addition, one liquid sample was recommended for collection and analysis from a socket in the floor containing an oily liquid.	2 wood block samples and 1 liquid sample: VOCs, SVOCs, metals, PCBs, cyanide, and TPH (plus dioxins and furans analysis for 1 wood block sample).	**Wood block samples:** VOCs, SVOCs, TPH-gasoline, TPH-diesel, TPH-motor oil, and 15 of the 17 metals were detected in at least one sample. Chromium, copper, and lead exceeded the RCRA TCLP criteria for hazardous waste characterization by 20 times. Dioxins and furans exceeded screening criteria.	No Further Action is recommended at this time for the wood block floors because of the lack of immediate threat to human health and the environment. Human health risks are minimized by the lack of receptors coming into contact with the floors, while potential impacts to the environment are minimized because the wood block floors are underlain by a concrete floor and because the building has a roof that prevents contact with rainfall. Based on sampling results, the wood block floors could be considered a hazardous waste if removed from their current location.
				Liquid sample: TPH-motor oil and 5 of the 17 metals were detected in the liquid sample. VOCs were not analyzed because of insufficient sample volume. All liquid that existed in the socket (less than 0.25 liter) was removed and submitted for laboratory analysis. No criteria were exceeded.	No Further Action for the liquid because no criteria were exceeded and because its entire volume was removed and submitted for laboratory analysis.
57	Dirt Floor-Foundry/Heat Treatment Area, Building 128 (AOC MISC 5)	AOC MISC 5 consists of the Dirt Floor in the heat treatment/forging area located in the northeastern corner of Building 128. The work areas included forging furnaces, forging hand tools, saws, a grinder, a sandblasting booth, and a quench tank situated on the dirt floor. The dirt floor was likely used to facilitate the removal of any molten metal slag (generated during forging activities) that was spilled on the floor. During the 1998 site reconnaissance, the dirt floor appeared to be approximately 3 to 4 inches thick and consisted of a fine sand-like material on top of concrete. Sampling was performed for AOC MISC 5 because of possible impacts on the dirt floor from Building 128 heat treatment/forging operations.	4 soil samples: metals	**Soil samples:** Sixteen of the 17 metals analyzed were detected in at least one sample. Arsenic, chromium, and lead were detected at concentrations above U.S. EPA industrial PRGs in at least one sample. The soil is considered hazardous. Approximately 40 cubic yards of soil exist at the dirt floor area.	Further Action: Remove soil and dispose of as hazardous waste. As discussed in Section 4.73, the soil in this area is also characterized as hazardous because of dioxins and furans.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
58	Diesel Test Cells, Including USTs 129.3 to 129.9, Building 129 (AOC MISC 6)	AOC MISC 6 consists of four diesel test cells located in the northeastern corner of Building 129. Each cell consists of a room where diesel engines were tested under excessive load. There was a very strong diesel odor inside the building and the floors were heavily stained during the 1998 site reconnaissance. Previous soil samples have been collected in the vicinity of the diesel test cells as part of the Closure Program for USTs. Further sampling for soil and groundwater was recommended for USTs 129.8 and 129.9. Sampling was performed for AOC MISC 6 downgradient of former USTs 129.8 and 129.9 and near two utility trenches. Sampling near USTs 129.8 and 129.9 was performed because of the possibility that previous spills or leaks occurred within these areas and because of TPH results in the soil obtained during removal of USTs 129.8 and 129.9 in 1993.	4 soil and 4 groundwater samples: SVOCs, metals, TPH-diesel, and TPH-motor oil.	**Soil Samples:** Two VOCs (PCE and TCE) were detected in at least one soil sample, but not above screening criteria. No SVOCs or TPH-motor oil were detected. Eleven of the 17 metals were detected in the soil samples, but not above screening criteria. **Groundwater Samples:** The VOCs (chloromethane and cis-1,2-DCE) and TPH-diesel were detected in at least one sample, but not above screening criteria. No SVOCs or TPH-motor oil were detected. Nine of the 17 metals were detected in the groundwater samples, but not above screening criteria.	No Further Action
59	Shipyard Gasoline Station, Including USTs 356 to 376 and 101.1 to 101.6 (AOC MISC 7)	AOC MISC 7 consists of the former Shipyard Gasoline Station, including USTs that were located at the site. USTs have been present at this AOC since 1943, but were removed and/or replaced on several occasions. As of 1998; all USTs had been removed. A 1997 investigation identified significant levels of gasoline, diesel, and MTBE in the soil south of Building 101 and recommended that groundwater be delineated in the area. Groundwater investigations for the area surrounding the Gasoline Station have been conducted and the contaminated areas have been delineated to the east, south, and west, except for MTBE. No further action is recommended for AOC MISC 7 under the AOC Investigation project because further action for the LBNSY Gasoline Station is currently being addressed under the existing UST Compliance Program. Further soil and groundwater sampling beneath Building 101 and further delineation of MTBE are planned for 1999.	None	NA	No Further Action under the AOC Investigation project, but Further Action will be performed under the existing UST Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
60	Transportation Facility Yard Associated with Building 54 (AOC MISC 8)	AOC MISC 8 consists of Building 54, 73, 121, and 122, as well as the associated transportation facility yard that were used for storage and repair of vehicles such as trucks, cranes, forklifts, and earth moving equipment. Many ground and floor stains were identified during the 1998 site reconnaissance of Building 54. Potential sources of contaminants, including drain pits, sumps, OWSs, vehicle wash racks, and floor drains, were identified. Sampling was performed for AOC MISC 8 because of potential spills and leaks associated with the transportation yard and shop. The hydraulic lifts and jacks are not included in the AOC Investigation because they are being addressed in the existing UST Compliance Program and were removed in 1999.	11 soil and 11 groundwater samples: VOCs, SVOCs, metals, PCBs, CN, and TPH	**Soil Samples:** The SVOCs (Benz(a)anthracene, Benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene) were detected in sample 99SY-MI8h-S-1. TPH-motor oil and PCBs were detected in three of the soil samples. TPH-diesel was detected in two of the soil samples. VOCs and TPH-gasoline were not detected. Fourteen of the 17 metals were detected in the soil samples. Cyanide was not detected in any of the soil samples collected. No detected analytes exceeded screening criteria.	No Further Action No Further Action for the hydraulic lifts and jacks under the AOC Investigation project, but Further Action will be performed under the existing UST Compliance Program.
				Groundwater Samples: The SVOC BEHP was detected in six of the groundwater samples, four above screening criteria. The concentrations of 0.013, 0.018J, 0.020, and 0.088 mg/L exceeded the Ocean Plan criteria of 0.0035 mg/L. Resampling performed in August 1999 at the location with the highest concentration of 0.088 mg.L did not confirm this result; instead, concentrations of 0.0029 and 0.016 mg/L were detected using two different pieces of sampling equipment. There were also indications of phthalates in laboratory blank samples. VOCs and PCBs were not detected. Cyanide was not detected in any of the soil samples collected. TPH-gasoline, TPH-diesel, and TPH-motor oil were also detected. Eleven of the 17 metals were detected in the groundwater samples. None exceeded screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
61	Building 130 Ventilation Gasket Removal Area (AOC PCB 16)	The north compound of Building 130 was used for removing PCB-contaminated gaskets from ventilation systems used on ships and in LBNSY buildings. The site includes two SAPs where used PCB-contaminated gaskets and coveralls (any item of work clothing worn by shop personnel that may have been contaminated by PCBs during work activities) were stored. An estimated 310 pounds of PCB-contaminated gaskets were generated from the shipboard ventilation systems on an annual basis. An estimated 600 pounds of PCB-contaminated coveralls were generated annually from the cleaning of the ventilation systems. Regulatory agency personnel observed paint stains on the asphalt pavement adjacent to the southwestern corner of the ventilation gasket removal area on 15 April 1998. The faded paint stains covered approximately 3 feet by 6 feet of asphalt and appear to have resulted from paint spill(s). Sampling was performed for AOC PCB 16 because of the operations involving PCB-contaminated materials, undocumented procedures and waste handling practices, and the uncertainty of the time period during which operations were conducted. In addition, the paint stains indicate a small release of paints to the ground.	1 wipe sample: PCBs 1 soil and 1 groundwater sample: VOCs and metals	**PCB Wipe:** No PCBs were detected. **Soil Sample:** No VOCs were detected in the sample. 12 of the 17 metals analyzed were detected. No metals detected in samples exceeded their respective industrial PRGs or background levels. **Groundwater Sample:** No VOCs were detected in the sample; 9 of the 17 metals were detected. No metals detected in samples exceeded their respective industrial PRGs or background levels.	No Further Action
62	Equipment #618444 Sump A and Sump B, Building 132 (AOC PCB 17)	This AOC consists of a hydraulic press and two associated sumps. The press, located inside Building 132 in the machine shop on the first intermediate floor, was used for fabricating metal parts. The sumps are part of the machine and likely contained lubricating/cooling oil for the press. The floor beneath the press is composed of wood blocks. During a previous investigation, oil samples were collected from the two sumps (Sump A and B) and analyzed for PCBs. Sump A results showed 50.26 parts per million (ppm) of PCBs and Sump B results showed 51.00 ppm PCBs. Wipe sampling on the floor was performed for AOC PCB 17 because of the possibility of past spills or leaks at the hydraulic press.	4 wipe samples: PCBs	**PCB Wipe Samples:** PCBs were detected in each sample at respective concentrations of 3.7, 2.2, 2.3 and 1.6 $\mu g/100cm^2$. No PCBs were detected at concentrations that exceeded the 40 CFR 761 (IV) (C) (2) b and c criteria for low contact indoor surfaces of 10 $\mu g/100cm^2$.	No Further Action
63	Equipment #116076C Building 132 (AOC PCB 18)	Equipment number 116076C and its previous location were not found during the March 1998 site reconnaissance. This equipment was not listed on the LBNSY equipment inventory that was compiled in 1996, indicating that it most likely had been removed from LBNSY prior to 1996. Sampling results from the 1993 PCB investigation for LBNSY equipment indicate that oil from equipment number 116076C had a PCB concentration of 19.74 ppm. No further action is recommended for AOC PCB 18 because the oil PCB concentration was less than 50 ppm and thus is not considered PCB-contaminated equipment per 40 CFR 761. In addition, the equipment cannot be located on LBNSY property and likely was removed prior to 1996.	None	NA	No Further Action
64	Building 130 PCB SAPs (AOC PCB 20)	AOC PCB 20 includes two SAPs at Building 130 where used PCB-contaminated gaskets, nuts, bolts, and coveralls were stored. The SAPs were located within a chain-link fenced north of Building 130. These SAPs, which operated from 1993 to 1996, annually generated approximately 310 pounds of PCB-contaminated gaskets and 600 pounds of PCB-contaminated coveralls from the cleaning of the ventilation systems. The quantities of oil and PCBs absorbed in the felt gaskets and remaining on the coveralls were likely relatively low. Wipe sampling was performed for AOC PCB 20 because of the operations involving PCB-contaminated materials.	1 wipe sample: PCBs	**PCB Wipe Sample:** No PCBs were detected.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
65	Plating Shop, Building 210 (AOC PT 1)	Building 210 plating shop operations in the northeastern corner of the building were conducted from 1974 through 1997. The plating shop had 56 tanks ranging in size from 55 to 5,400 gallons. The plating shop was used for hard chrome, nickel, cadmium cyanide, silver cyanide, copper cyanide, and gold plating operations. A variety of acid and base cleaners, solvents, metal and cyanide solutions, and rust preventive solutions were used. The tanks were located in a sunken concrete floor; a drainage swale in the concrete floor was used to route spilled solutions to a sump, where a pump was used to discharge wastes as discussed below. The plating shop generated approximately 1,000 gallons per year of waste hazardous plating solutions and the associated cleaning operations generated 30,000 to 60,000 gallons per year of waste caustic solution. Prior to use of the IWTP in 1990, all liquid waste generated from plating operations was discharged to the sanitary sewer. After completion of the IWTP in 1990, the rinsewater from plating operations was diverted to the IWTP for treatment. Sampling was performed for AOC PT 1 based on the large volume and toxicity of plating solutions used at this Plating Shop and the likelihood of spills or leaks over the years. Soil and groundwater in this area could possibly have been impacted and were sampled. In addition, a sample of liquid that was present in a sump area at the north central portion of the Plating Shop was collected for analysis.	7 soil, 7 groundwater, and 1 liquid sample: VOCs, metals, CN, pH and Cr^{+6}, SVOCs[b] 3 additional soil and groundwater samples had been planned, but a second concrete floor located 4 feet beneath the main floor impeded access.	**Soil Samples:** No organic compounds or cyanide were detected; 9 of the 17 metals were detected. None of the metals exceeded screening criteria. **Groundwater Samples:** Two VOCs, and 8 of 17 metals were detected. None of the VOCs or metals exceeded screening criteria.	No Further Action for Soil and Groundwater
				Liquid Samples: Four chlorinated VOCs were detected, none above groundwater screening criteria, but carbon tetrachloride was above hazardous waste criteria. No metals were detected above hazardous waste criteria.	Further Action for Liquid: Pump out remaining liquid in sump area and dispose of as hazardous waste. It is possible that the concrete floor may also be considered a hazardous waste once removed.
66	Plating Shop, Building 129 (AOC PT 2)	The northwestern corner of Building 129 and outside area north of the shop were used as a plating shop area from the 1940s to approximately the mid-1970s. The plating shop was removed in the mid-1970s and the northwestern corner inside Building 129 was used as an air compressor shop until approximately 1996, when LBNSY operations ceased. Little information is known about the day-to-day operations at AOC PT 2. Because of the nature of the operation and the disposal methods, spills likely occurred in and around the plating shop. Soil and groundwater were sampled to assess whether wastes that may have been spilled or leaked may have impacted the soil and/or groundwater directly beneath the plating shop. Many soil and groundwater samples to the north of Building 129 were previously collected and analyzed as part of other investigations.	1 soil and 1 groundwater sample: VOCs, metals, CN, pH, and Cr^{+6}	**Soil Sample:** No VOCs were detected. Eleven of the 17 metals analyzed were detected in the soil. No metals were above the screening criteria. **Groundwater Sample:** Cis-1,2-DCE was the only VOC detected. Two metals were detected. No VOCs or metals were above the screening criteria. The cis-1,2-DCE concentration was lower than at other nearby locations investigated in previous studies, suggesting a source other than the Building 129 plating shop.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
67	Metal Cleaning/Plating Shop, Building 205 (AOC PT 3)	Building 205 consists of two floor areas, one bermed and the other unbermed. The bermed area is surrounded by a one-foot high berm, and inside the bermed area is a four-inch high, raised concrete platform. Potential spills from cleaning tank operations would have been contained in the channel between the platform area and the outside berm. During the March 1998 site reconnaissance, it appeared that the concrete floors were in good condition and showed no evidence of staining or past cleaning or plating shop operations. The facility was constructed in 1978 and used for approximately 13 years. According to LBNSY personnel, machine parts were transported from Building 129 and dipped in cleaning tanks at Building 205. The facility had proper containment berms, but LBNSY personnel indicated that spills occurred and that housekeeping at the cleaning tanks was poor. Various types of degreasers were used at the facility. Specific degreasers used at the facility are unknown, but likely included TCE and sodium nitrate (rust inhibitor). It is not certain that plating activities ever occurred at this facility. Sampling was performed for AOC PT 3 because of the use of degreasing solvents, the possibility of spills, and the lack of information regarding general operation and management of the facility. Soil and groundwater sampling were performed to assess whether wastes may have impacted the soil and/or groundwater beneath the cleaning shop.	5 soil and 5 groundwater samples: VOCs, SVOCs, metals, PCBs, Cr^{+6}, and TPH	**Soil Samples:** Three VOCs (PCE, 1,3-dichlorobenzene, and 1,1,1-trichloroethane) were detected. No SVOCs were detected TPH-diesel and TPH-motor oil was detected. Of the 17 metals analyzed, 13 were detected in one or more soil samples. No analytes exceeded screening criteria. **Groundwater Samples:** One VOCs (cis-1,2-DCE) was detected. One SVOC (BEHP) was detected. TPH-diesel, TPH-motor oil and PCBs were not detected. Three of the seventeen metals analyzed were detected in one or more of the groundwater samples. No analytes exceeded screening criteria.	No Further Action.
68	Valve Cleaning/Plating Shop, Building 132 (AOC PT 4)	During the March/April 1998 site reconnaissance, the concrete floor area inside the valve cleaning area in the eastern portion of Building 132 was inspected, and showed no signs of past cleaning tank operations. AOC PT 4 consisted of nineteen cleaning and rinse tanks located in the eastern portion of Building 132 as well as two ASTs (one for hydrochloric acid and one for sodium hydroxide). Valve cleaning may have occurred in this area from the 1960s to 1980s. The tanks were reportedly used for plating operations for only 1 to 2 months, then removed because of structural problems with the concrete. The sunken floor areas were filled with possibly as much as five feet of concrete. Further action was recommended for AOC PT 4 because of the toxic materials used during the operations and the lack of information concerning operational management. Soil and groundwater sampling was performed to assess whether wastes have impacted the soil and/or groundwater near the cleaning area. Samples were collected outside the shop to the east because coring through the thick concrete-filled former tank area was not feasible.	4 soil and 3 groundwater samples: VOCs, metals, CN, pH and Cr^{+6}	**Soil Samples:** No organic compounds were detected. Fourteen of the 17 metals were detected. No metals were above screening criteria. **Groundwater Samples:** Two VOCs (chloroform and toluene) were detected. Eleven of the 17 metals were detected. No VOCs or metals were above screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
69	Plating Shop, Building 132, Second Floor (AOC PT 5)	AOC PT 5 consists of a plating shop containing seven process tanks and four associated rinse tanks located on the second floor (fourth story) of Building 132. Five 4-inch diameter PVC pipes connect from the plating shop on the 2nd floor to near the ground surface outside the western side of Building 132 about 150 feet to the south. These pipes appear to have been used to pump new plating solutions from a truck at the ground surface up to the plating shops. Three PVC pipelines used to discharge plating wastes (to the IWTP since 1990) lead from the plating shop to the eastern side of Building 132. Four process tanks (660-gallon capacity each) individually contained TCE, caustic soda, muriatic acid, and chromic acid. They were drained every 3 to 18 months and discharged to an outside tank for transport offsite. Two tanks (600-gallon capacity each) contained Microbright acid solution and alkali cleaner and were reportedly not drained, but solution was added periodically to maintain full volume. One process tank (1,200-gallon capacity) was used to contain acid paint stripping solution and was drained to a tank for transport offsite by an outside contractor whenever disposal was necessary. The four rinse tanks (660-gallon capacity each) were drained continuously into the sanitary sewer. Sampling was performed for AOC PT 5 because of potential leaks or spills from activities involving the transfer of liquids from trucks to the plating shop through the pipelines that could have impacted the soil and/or groundwater on the western side of Building 132.	1 soil and 1 groundwater sample: VOCs, metals, CN, pH and Cr^{+6}	**Soil Sample:** No VOCs, cyanide, or Cr^{+6} were detected. Ten of 17 metals were detected. None of the metals were above screening criteria. **Groundwater Sample:** The VOC chloroform was detected. Four metals were detected. None of the analytes detected were above screening criteria.	No Further Action
70	Sheet Metal Cleaning/Plating Shop, Building 130 (AOC PT 6)	AOC PT 6 consists of 5 process dip tanks located in the southeastern part of Building 130, including stripping agents, degreaser solvents, desmutting solvents, rinsing wash, and chromic acid. An 800-gallon caustic dip tank, used for aluminum stripping, was installed in 1942 and used along with the 800-gallon rinse tank. Between 1969 and 1976, a 400-gallon degreaser tank, 800-gallon desmutter tank, and the 200 gallon chromic acid tank were installed as part of improvements to the plating operations at Building 130. The five plating process tanks generated various wastes, including caustic solution, aluminum etchant agents, desmutter acid, degreaser solvent, chromate acid, and wastewater from the rinse tank. The caustic dip tank waste was reportedly sent to the Navy mole for disposal at the waste disposal pits, now designated at Installation Restoration (IR) Site 3. Starting in 1972, wastes from the caustic dip tank and degreaser tank were disposed of by outside contractors on an annual basis. The desmutter and chromic acid tanks were refilled with acid periodically and cleaned out by an outside contractor every 3 to 5 years. The rinse tank continually overflowed into the sanitary sewer system through the floor drain in the plating shop. Sampling was performed for AOC PT 6 because of the types of hazardous materials handled during operations and evidence of spills on the floor of the plating shop. Soil and groundwater sampling was performed to assess whether wastes have impacted the soil and/or groundwater beneath the plating shop.	4 soil and 3 groundwater samples: VOCs, metals, CN, pH and Cr^{+6}	**Soil Samples:** No VOCs, cyanide, or Cr^{+6} were detected. Fourteen of 17 metals were detected. None of the metals were above the screening criteria. **Groundwater Samples:** The VOC 1,2,3-trichlorobenzene was detected. Eight of the 17 metals were detected. No VOCs or metals were above the screening criteria. No cyanide or Cr^{+6} were detected.	No Further Action
71	Cleaning Dip Tanks, Building 129 (AOC PT 7)	The cleaning dip tanks, located in the southeastern corner of Building 129, were most likely used from 1975 until the late 1980s. Cleaning consisted of a series of ten process and ten rinse tanks. Cleaning processes included soak cleaning, carbon removal, bright dip, a rust prevention dip, and rinsing. The maximum waste flow rate from the marine machine shop cleaning operations was approximately 30 gallons per minute; the estimated daily flow rate was 28,000 gallons per day. The waste constituents included chromic acid, nitric acid, sulfuric acid, caustics, and phenols. The effluent from this facility flowed by gravity to the sanitary sewer system. No specific information was found regarding the operational management or the frequency and volume of spills at AOC PT 7. Sampling was performed for AOC PT 7 based on the types of waste materials handled and the lack of information on the operational management of the cleaning area. Soil sampling was performed to assess whether wastes have impacted the soil beneath the tanks.	3 soil samples: VOCs and metals. A fourth sample was planned but not collected because a second concrete floor was discovered beneath the main floor.	**Soil Samples** No VOCs were detected. Ten of the 17 metals were detected, but none of the metals were above screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
72	Tin Dip Tanks, Building 132 (AOC PT 8)	This site consisted of fifteen "Babbitt" dip tanks located in the northwestern part of Building 132. Tin dip operations in Building 132 reportedly occurred from the 1940s to 1990s. The tanks were actually 15-gallon pots and kettles that were used in conjunction with the casting and dipping for the tin Babbitt process. Recent operations used only three dip tanks, with one tank used for casting 97 to 99% tin and the remaining two for the Babbitt process, consisting of 89% tin, 7% antimony, 3% copper, and less than 1% lead and other metals. Two floor drains are located in the northwestern corner of Building 132. These tanks did not discharge directly to the floor drains, but there was a possibility of spills from when parts were removed from the tanks. The source of the wastewater was likely from rinsing associated with the Babbitt operations. Further action was recommended for AOC PT 8 because of the possibility of spills and the longtime period of operation. Soil sampling was performed to assess whether or not wastes have impacted the soil near the tin dip tanks.	2 soil samples: metals	**Soil Samples:** Tin was detected in each sample, but significantly below its screening criteria. Twelve of the other 17 metals were detected, but none exceeded screening criteria.	No Further Action
73	Quench Tanks, Building 128 (AOC PT 10)	Six of the seven tanks at this AOC are located in the heat treatment area along the eastern side of Building 128. The tanks were used from 1945 to 1996 in conjunction with the heat treatment area for increasing the hardness of various metals. The tanks operated continuously without changing out the solvent from the tank. The tanks were emptied and cleaned approximately every three years. Two quench oil tanks, two quench water tanks, and two solvent degreasing tanks were located in this area. The seventh tank, a quench oil tank, was located at the dirt floor area in Building 128. This tank was emptied and cleaned approximately every eight years. Tank discharges may have occurred from tank liquid overflow when parts were immersed or from dripping as parts were being removed from the tanks. Discharges may have entered the trench located adjacent to the tanks, then flowed to the sanitary sewer system. LBNSY personnel reported that there was a history of leaks and spills from the quench tanks during operations. The leaks and spills through the single-walled tanks had the potential for impacting the soil and groundwater beneath the concrete floor, via cracks or seams, with tank liquids containing metals, oil and grease, and chlorinated solvents. Sampling was performed for AOC PT 10 because of the reported spills and leaks from the quenching tanks and the lack of information on the quench tanks located in Building 128. Soil and groundwater samples were collected to assess possible contamination beneath the quench tanks.	4 soil and 3 groundwater samples: VOCs, SVOCs, metals, PCBs, TPH, and dioxins and furans[c]	**Soil Samples:** Two SVOCs, the PCB Aroclor 1260, TPH-gasoline, TPH-diesel, and TPH-motor oil were detected, as were sixteen of the 17 metals. Three metals (arsenic, chromium, and lead), PCBs, and dioxins and furans exceeded screening criteria. These exceedances were in the sample collected at the Dirt Floor Heat Treatment/ Forging area. Metals were most likely the result of forging activities, so these exceedances are addressed in Section 4.57 for the Dirt Floor Heat Treatment/Forging area.	Further Action: Dispose of soil in the Dirt Floor Heat Treatment/Forging area as a hazardous waste, as described in Section 4.57.
				Groundwater Samples: TPH-gasoline, TPH-motor oil, five VOCs, and four of the 17 metals were detected, but did not exceed screening criteria. Mercury (0.0018 mg/L compared to screening criteria of 0.0009 mg/L) and the SVOC BEHP (0.110 mg/L, compared to the screening criteria of 0.0035 mg/L) were detected above the screening criteria in one sample. The source of BEHP is not clear. SVOCs analysis was performed to detect PAHs associated with quench oils, not because phthalates were expected.	Further Action: Additional site characterization to delineate BEHP and mercury detected in groundwater near a solvent and quench oil tank. Collection of four soil and four groundwater samples, one approximately 10 feet in each of four directions from sample location T10c, are recommended, with analysis for SVOCs, mercury, and VOCs. The easternmost sample may need to be collected outside Building 128 due to space constraints.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
74	Plasma Arc Cutting Tank, Building 128 (AOC PT 11)	This AOC, consisting of a tank and associated bladder used for cutting sheet metal with a plasma arc cutting process, is located in the southern part of Building 128. The 2,000-gallon bladder was located beneath the open 10,000-gallon tank and was used to recirculate water to the open tank. Sheet metal submerged in water was cut using a plasma arc torch. Wastewater from the cutting operations was reportedly changed out very infrequently prior to the 1990s. In the 1990s, the wastewater was cleaned out every 6 to 8 months and was discharged to the sanitary sewer through a floor drain. The wastewater from cutting operations was not considered to be hazardous because the water was continually circulated and no metal slag was discharged by LBNSY personnel. However, in periodic sampling by LBNSY personnel, relatively high concentrations of chromium, copper, nickel, zinc, and lead were detected. Only the metal slag and cuttings shoveled from the open tank were considered hazardous waste. Approximately six 55-gallon drums per year of slag were generated from the cutting operations. Sampling was performed for AOC PT 11 because of the possibility of spills and leaks of the wastewater in and around the tank and bladder used for plasma arc torch cutting operations. Soil and groundwater sampling was performed to assess whether wastes have impacted soil and/or groundwater beneath the plasma arc cutting tank.	1 soil and 1 groundwater sample: metals	**Soil Sample:** Twelve of the 17 metals were detected. None of the metals were above screening criteria. **Groundwater Sample:** Two of the 17 metals were detected. None of the metals were above screening criteria.	No Further Action
SATELLITE ACCUMULATION POINTS, BUILDING 52 (AOCs SAP 9 through SAP 15)					
75 to 81	Empty Aerosol Cans (Paint) (AOC SAP 9) X-Ray Film Development Waste (AOC SAP 10) Empty Aerosol Cans (Oil Base) (AOC SAP 11) Empty Aerosol Cans (Solvent) (AOC SAP 12) Waste Flashlight Batteries (AOC SAP 13) VP-30 Penetrant Rinse Water (AOC SAP 14) X-Ray Film Processing Waste (AOC SAP 15)	Seven SAPs were located inside Building 52 and were used in association with the activities conducted within the building. Building 52 was the Transmitter Building and later the Quality Assurance (QA) Office and Laboratory for LBNSY. The building contained general office space, an X-ray shooting area, an X-ray dark room, and a lay-down and set-up area. During the March 1998 site reconnaissance, the SAP drums were no longer in place. Outside the building, SAP placards were identified. The SAPs in Building 52 were used from 1993 to 1996 and consisted of accumulated aerosol cans, batteries, X-ray process and developing wastes, and VP-penetrant rinse water. No further action is recommended for AOC SAP 9 through AOC SAP 15 because the SAPs were operated for only 1 to 3 years; they were inside a covered building; they were located on pavement; proper containment was used; no problems were noted during weekly SAP inspections by LBNSY-ED; and no floor staining was observed.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 54 (AOCs SAP 16 through SAP 23)					
82 to 89	Waste Grease (AOC SAP 16) Recyclable Oil (AOC SAP 17) Waste Solvent (AOC SAP 18) Recyclable Antifreeze (AOC SAP 19) Waste Fuel Filters (AOC SAP 20) Waste Transmission Fluid (AOC SAP 21) Recyclable Dirty Rags (AOC SAP 22) Waste Steam Wash Rack Grease (AOC SAP 23)	Eight SAPs were located in Building 54 and were used for collection of waste and recyclable liquids, grease, and recyclable dirty rags. During the March 1998 site reconnaissance, the Building 54 Transportation Shop was no longer in use and the SAP drums were no longer in place. The first floor of the building had oil change and lubrication pits, as well as eight cranes to assist in repair and maintenance activities for heavy transportation equipment. Building 54 also had a battery shop in the southeastern corner of the building. Shop wastes were temporarily stored at the SAPs. Samples were taken from the SAP drums and sent to the laboratory in Building 52 for analysis, then SAP contents were disposed of based on these laboratory results. The SAPs located at Building 54 were operated from 1995 to 1997. No further action is recommended for AOC SAP 16 through AOC SAP 23 because the SAPs were operated for only 2 years, were inside a covered building, were located on pavement, no problems were noted during weekly SAP inspections by LBNSY-ED, and no floor staining was observed.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 128 (AOCs SAP 25 through SAP 44)					
90 to 109	Waste Empty Aerosol Penetrant, Lube Cans (AOC SAP 25) Waste Oil And Water (AOC SAP 26) Waste Aerosol Cans (Solvent) (AOC SAP 27) Waste Metal Dust (AOC SAP 28) Waste Sandblast Grit (AOC SAP 29) Waste Oily Rags (AOC SAP 30) Waste Empty Aerosol Cans (Paint) (AOC SAP 31) Waste Safe Step With Oil (AOC SAP 32) Waste Oily Rags (AOC SAP 33) Waste Floor Sweepings with Contaminated Metal Dust (AOC SAP 34) Waste CM-100 Sludge (Dry) (AOC SAP 35) Waste CM-100 Sludge (Dry) (AOC SAP 36) Waste Used Glass Bead Dust (Sandblast) (AOC SAP 37) Waste Exhaust Ventilation Debris (AOC SAP 38) Waste Aerosol Cans (Oil Base) (AOC SAP 39) Waste Exhaust Ventilation Debris (AOC SAP 40) Waste Metal Slag (AOC SAP 41) Waste Used Core Sand (AOC SAP 42) Waste Used Absorbent (AOC SAP 43) Waste Aerosol Cans (Paint) (AOC SAP 44)	Twenty SAPs were located in Building 128 and were used from 1993 to 1996 to store a variety of small quantities of various wastes. Building 128 housed the materials and machinery to fabricate, assemble, and install structural members of ships. SAPs were located throughout the building and used in the mid-1990s for storing wastes and spill cleanup materials from Building 128. During the March 1998 site reconnaissance, the approximate SAP locations were inspected. The SAP drums were no longer in place, and no evidence of staining was found. No further action is recommended for AOC SAP 25 through AOC SAP 44 because these SAPs were operated for only 3 years; they were inside a covered building; they were located on pavement; waste were properly contained; no problems were noted during weekly SAP inspections by LBNSY-ED; and no significant floor staining was observed.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 129 (AOC SAP 45 through SAP 60)					
110 to 125	Waste Oily Absorbent Pads (AOC SAP 45)	Sixteen SAPs were located in Building 129 and were used from 1993 to 1996 to store a variety of small quantities of various wastes. Building 129 was used to overhaul, repair, and install propulsion auxiliary machinery at LBNSY. Building 129 housed small machining services, propulsion component overhaul, and repair and testing of pumps, valves, turbines, propellers, shafts, and other components. Building 129 was composed of two main shops: the Electrical Shop (Shop 51) and the Weapons Shop (Shop 36), which generated waste oils, greases, cosmoline, and solvents used for degreasing and paint removal. No further action is recommended for AOC SAPs 45 to 60 because these SAPs were operated for only 1 to 4 years; they were inside a covered building; they were located on pavement; wastes were stored in containers on spill containment pallets; no problems were noted during weekly SAP inspections by LBNSY-ED; and no floor staining was observed.	None	NA	No Further Action
	Waste Hydraulic Oil (AOC SAP 46)				
	Waste Oily Rags (AOC SAP 47)				
	Waste Oily Rags (AOC SAP 48)				
	Waste Lubricating Oil (AOC SAP 49)				
	Waste Oily Absorbent Pads (AOC SAP 50)				
	Waste Sandblast Grit (AOC SAP 51)				
	Waste Hydraulic Oil 2110th (AOC SAP 52)				
	Waste Hydraulic Oil 2135th (AOC SAP 53)				
	Waste Lube Oil (AOC SAP 54)				
	Waste Lube Oil (AOC SAP 55)				
	Waste Fyrquel Preservative (AOC SAP 56)				
	Waste Lube Oil (AOC SAP 57)				
	Waste Fyrquel Lubricant (AOC SAP 58)				
	Waste Vacuum Pump Oil (AOC SAP 59)				
	Waste Refrigeration Oil (AOC SAP 60)				

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 130 (AOC SAP 61 through SAP 68)					
126 to 133	Waste Paint (AOC SAP 61) Waste Absorbent Pads And Oily Rags (AOC SAP 62) Waste Empty Aerosol Lube Cans (Formula 202) (AOC SAP 63) Waste Hait Rags (AOC SAP 64) Waste Empty Aerosol Paint Cans (Layout Blue) (AOC SAP 65) Plasma Arc Waste (Heavy Metals) (AOC SAP 66) Waste Blast-off Rags (Caustic) (AOC SAP 67) Waste Butylacetate (AOC SAP 68	Eight SAPs were located in Building 130 and were used from 1993 to 1996 to store a variety of small quantities of various wastes. During the March 1998 site reconnaissance, the SAP drums were no longer in place. Building 130 was used for fabrication and repair of ship heating, air-conditioning, and ventilation ductwork as well as general sheet metal operations. Building 130 housed the material and equipment for punching, forming, sawing, painting, welding, plating, and assembly of sheet metal. Operations generated scrap metals, caustics, waste paints, used absorbents, waste rags, and empty aerosol cans. No further action is recommended for AOC SAP 61 through AOC SAP 68 because these SAPs were operated for only 2 to 3 years; they were inside a covered building; they were located on pavement; proper containment was used; no problems were noted during weekly SAP inspections by LBNSY-ED; and no floor staining was observed.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 132 (AOC SAPs 74, 76, and 78 through 107)					
134 to 165	Waste Oily Rags (AOC SAP 74) Waste Oily Absorbent (AOC SAP 76) Waste Oily Absorbent (AOC SAP 78) Waste Oil (AOC SAP 79) Used Absorbent Pads (AOC SAP 80) Waste Oily Absorbent Socks (AOC SAP 81) Waste Grinding Swarf (AOC SAP 82) Waste Oily Rags (AOC SAP 83) Waste Oil (AOC SAP 84) Waste Aerosol (Gas) (AOC SAP 85) Waste Absorbents (AOC SAP 86) Waste 1,1,1-Trichloroethane (AOC SAP 87) Spent Alcohol (AOC SAP 88) Waste Glass Beads (AOC SAP 89) Waste Brazing Flux (AOC SAP 90) Waste Consumable Batteries (AOC SAP 91)	Thirty-two SAPs were located in Building 132 and were used from 1993 to 1996 to store a small quantities of various wastes. During the March 1998 site reconnaissance, the SAP drums were no longer in place. Building 132 originally housed the Machine Shop and Propeller Shop, but in the 1970s an eastern wing was constructed and used as the Pipe and Copper Shop. Primary activities conducted in Building 132 include repair and fabrication of pumps, valves, pipes, propellers, and other necessary equipment used on ships; equipment testing; and storage of hazardous materials and wastes. Building 132 housed machinery, including milling machines, drilling machines, lathes, grinders, planers, and saws. No further action is recommended for AOC SAP 74, AOC SAP 76, and AOC SAP 78 through AOC SAP 107 because these SAPs were operated for 5 years or less; they were inside a covered building; they were located on pavement; wastes were properly contained; no problems were noted during weekly SAP inspections by LBNSY-ED; and no floor staining was observed. Note: SAPs 75 and 77 were addressed as Group A Points of Interest (LBNSY-ED 1997a).	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
134 to 165 (cont.)	Waste Asbestos Construction Materials (AOC SAP 92)				
	Waste Electrode Slag Surfacing (AOC SAP 93)				
	Waste Alkaline Batteries (AOC SAP 94)				
	Waste Oily Rags (AOC SAP 95)				
	Waste Absorbent Pads (AOC SAP 96)				
	Waste 1,1,1-Trichloroethane (AOC SAP 97)				
	Waste Wood Rosin (AOC SAP 98)				
	Waste Contaminated Rubber Hoses (AOC SAP 99)				
	Waste Oily Absorbent Material (Safe Step) (AOC SAP 100)				
	Waste Tungsten Rods (AOC SAP 101)				
	Waste Tungsten Rods (AOC SAP 102)				
	Waste Cobalt Rods (AOC SAP 103)				
	Waste Monel Rods (AOC SAP 104)				
	Waste Solvent Soaked Cement Rags (AOC SAP 105)				
	Waste Soaked Oily Rags (AOC SAP 106)				
	Waste Isopropyl Alcohol (AOC SAP 107)				

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
SATELLITE ACCUMULATION POINTS, BUILDING 202 (AOC SAPs 108, 109, and 111 through 114)					
166 to 171	Waste Epoxy And Enamel Paint (AOC SAP 108) Waste Epoxy And Enamel Paint (AOC SAP 109) Waste Epoxy And Enamel Paint (AOC SAP 111) Waste Epoxy And Enamel Paint (AOC SAP 112) Waste Epoxy And Enamel Paint (AOC SAP 113) Waste Epoxy And Enamel Paint (AOC SAP 114)	Building 202 was used for painting activities since its construction in 1978. Six SAPs were used in association with Building 202 painting operations, which consisted of three booths approximately 60 feet long by 30 feet wide by 50 feet in height. Most of the paint waste was collected in sumps beneath the metal grating floor of each paint booth. Waste epoxy and enamel paint were temporarily stored in the SAPs. No further action is recommended for AOC SAP 108, AOC SAP 109, and AOC SAP 111 through AOC SAP 114 because these SAPs was operated for only 2 years; they were inside a covered building; waste were properly contained, no problems were noted during weekly SAP inspections by LBNSY-ED; and no concrete floor staining was observed. Note: SAP 110 was addressed as a Group A Point of Interest (LBNSY-ED 1997a).	None	NA	No Further Action
172	SAP for Waste Paint (Solid), Building 210 (AOC SAP 133)	AOC SAP 133, located outside Building 210, was used to store small quantities of waste paint from a paint booth. No further action is recommended for AOC SAP 133 because the SAP was operated for only 3 years, only solid wastes were stored; wastes were properly contained; no problems were noted during weekly SAP inspections by LBNSY-ED; and no ground staining was observed.	None	NA	No Further Action
173	SAP for Waste Gasoline and Diesel, Building 356 (AOC SAP 146)	AOC SAP 146 was located at the former LBNSY Gasoline Station south of Building 101. During the March 1998 site reconnaissance, the approximate SAP location was inspected. The SAP was no longer in use, and no evidence of staining was found. The EBS spill log indicates no reported spills at Building 356. No problems were noted at the SAP during weekly inspections. No further action is recommended for AOC SAP 146 because this SAP was operated for only 3 years; wastes were properly contained; no problems were noted during weekly SAP inspections by LBNSY-ED; and no staining was observed.	None	NA	No Further Action
174	SAP for Chrome-Stained Rags and Tape, Building 210 (AOC SAP 171)	AOC SAP 171, located outside the northern end of Building 210, was used to store small quantities of chrome-stained rags and tape associated with the plating shop. No further action is recommended for AOC SAP 171 because the SAP was operated for only 3 years; only solid wastes were stored; wastes were properly contained; no problems were noted during weekly SAP inspections by LBNSY-ED; and no ground staining was observed.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
175	Fuel Oil Tanks 128.1, 28.2, and Pump Vault 128.3 (AOC UST 1)	The two fuel oil tanks and the pump vault were constructed in 1943 may have been associated with the Foundry located inside Building 128. The tanks were originally used for storage of fuel oil, and subsequently used for disposal of paint and other waste from LBNSY activities. There were no records to indicate when the diesel fuel operations ceased. USTs 128.1 and 128.2 and the Pump Vault 128.3 were removed from the ground in January 1997 as part of closure activities for the tanks. Soil removal and remediation were required, based on soil sampling conducted adjacent to the tanks. The site was approved by the regulatory agencies for closure for soils in 1998. In August 1998 under a separate project, CDM Federal conducted additional groundwater sampling at depths ranging from 20 to 42 feet bgs. The sampling results indicate that no analytes (except for one SVOC) exceeded their respective water quality objectives. The groundwater investigation results reported in the Closure Report, dated January 1999, indicate that no further action is required for groundwater, and closure of the site was recommended. No further action is recommended for AOC UST 1 because the site has been closed for soils by the Long Beach City Fire Department (lead agency on UST removals at LBNSY) and because the results of the 1998 groundwater investigation indicate there are no contaminants above water quality objectives for the contaminants of concern. Based on the additional groundwater investigation, groundwater monitoring was performed in 1998. Site closure was approved for no further action by the LA RWQCB in a letter dated 19 February 1999.	None	NA	No Further Action
176	Paint Wash Tank 216.1 (AOC UST 2)	Paint Wash Tank 216.1, located inside Building 216, was built in the mid-1970s and has a capacity of 1,000 gallons. Sandblasting activities conducted at Building 216 consisted mainly of preparing steel plates for painting by a surface-polishing unit that used aluminum and steel grit, as well as glass beads. Wastes generated included blasting abrasive fines, paint, and rust. Spent abrasive grit was disposed of as nonhazardous material by an outside contractor. Sampling was conducted in 1993 adjacent to the southwestern corner of the tank and as part of the UST Compliance Program. No analytes were detected, except for toluene and lead, which were detected at low concentrations. Additional groundwater sampling was conducted adjacent to Building 216 in 1997 as part of the RI for Sites 9, 12, and 13. The results indicate that a VOC plume exists underneath Building 216, possibly as a result of a TCE spill in 1974 or 1975 at the northeastern corner of Building 129. Further action was recommended for AOC UST 2 based on the sandblasting activities performed and the identified groundwater contamination beneath Building 216. Soil and groundwater sampling was performed near Building 216 on the northern side of the tank. The sampling location was selected because it is hydraulically downgradient of the low point in the tank and is in an area that had not been previously sampled under the RI for Site 9. Tank 216.1 was removed in 1999 under the Compliance Program and the removal report is undergoing regulatory review.	1 soil and 1 groundwater sample: VOCs, SVOCs, and metals.	**Soil Sample:** No VOCs or SVOCs were detected. Ten of seventeen metals analyzed were detected, but did not exceed screening criteria. **Groundwater Sample:** No VOCs or SVOCs were detected. Seven of seventeen metals analyzed were detected, but did not exceed screening criteria.	No Further Action under the AOC Investigation project, but Tank 216.1 is scheduled for removal in 2000 under the Compliance Program.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
177	Diesel Fuel Tanks 129.1 and 129.2 (AOC UST 3)	Diesel Fuel Tanks 129.1 and 129.2 were constructed in 1986 and were used in conjunction with the Building 129 diesel test cells from 1986 until the early 1990s. The two USTs were removed along with 530 feet of associated piping in late 1996. In addition, soil and groundwater samples were collected from the site where the tanks were removed as part of the closure process. The results from the in-place soil, excavated soil, and groundwater samples were all below the established screening thresholds established for the closure of the site. The Los Angeles RWQCB submitted a concurrence letter for closure of USTs 129.1 and 129.2 on 22 May 1998 and the City of Long Beach Health Department submitted a letter for closure of the site on 29 May 1998. No further action is recommended for AOC UST 3 because closure has been completed and regulatory approval for closure has been received from the Los Angeles RWQCB and the City of Long Beach Health Department.	None	NA	No Further Action
178	Paint Wash Tanks 202.1, 202.2, and 202.3 (AOC UST 4)	Paint Wash Tanks 202.1, 202.2, and 202.3 are located inside Building 202 and were used to contain liquids from washing of equipment associated with painting and sandblasting activities in the building. The tanks were built in 1978, are constructed of concrete, and each has a capacity of 33,000 gallons. The types of materials and waste produced during painting include paint waste, alkaline solutions, stripping solutions containing paint, varnish remover, and sodium hydroxide. Building 202 also conducted shop (small-scale) abrasive blasting using aluminum and steel grit, although these operations were mostly done in Buildings 203 and 204. The UST log for LBNSY indicates that the tanks were cleaned by LBNSY personnel and designated as inactive when operations ceased at LBNSY in 1996. However, closure for these USTs has not been completed. Sampling was performed for AOC UST 4 to identify any potential contamination from painting activities at the Building 202 tanks. Soil and groundwater sampling was performed for collection adjacent to the tanks. In addition, as requested by the regulatory agencies in a site walk on 15 April 1998, one soil sample and one storm drain catch basin sediment sample were collected to assess potential impacts from sandblasting operations at Buildings 203 and 204. One soil sample was also collected to assess potential impacts of a hydraulic fluid oily stain between Buildings 203 and 204. The Port of Long Beach requests that these tanks be left in place for possible future reuse.	Near tanks - 5 soil and 5 groundwater: VOCs, SVOCs, and metals. Near Buildings 203, 204 – 2 soil, 1 groundwater, 1 sediment: VOCs, SVOCs, metals.	**Soil Samples:** There were no VOCs or SVOCs detected. Fourteen of 17 metals were detected, but none exceeded screening criteria.	No Further Action
				Groundwater Samples: Two VOCs (cis-1,2-dichloroethene and toluene) and two SVOCs (BEHP and BBP) were detected. Nine of 17 metals were detected in the soil samples. Only BEHP exceeded screening criteria (in one sample), but is suspected to be a laboratory contaminant. **Sediment Sample:** No VOCs were detected, two SVOCs (BEHP and DOP) were detected, and fourteen of 17 metals were detected, but none exceeded screening criteria.	No Further Action
179	Diesel Fuel Tanks 302.1, 302.2, and 302.3 (AOC UST 7)	USTs 302.1, 302.2, and 302.3 were constructed in 1973 for storage of diesel fuel in association with the Boiler Plant at Building 302. Each tank was constructed of steel and had a capacity of 25,000 gallons. The tanks were removed in August 1997. During the September 1998 site reconnaissance, new asphalt covered the area where the USTs formerly existed south of Building 302. Soil samples were collected from the excavated soil and excavation pit and analyzed for TPH as diesel and for TRPH. Soil sample results were below the Los Angeles RWQCB screening criteria. The RWQCB submitted a concurrence letter for closure of USTs 302.1, 302.2, and 302.3 in July 1998 and the City of Long Beach Health Department submitted a letter for closure of the site in September 1998. No further action is recommended for AOC UST 7 because closure has been completed and regulatory approval for closure has been received from the RWQCB and the City of Long Beach Health Department.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
180	Diesel Fuel Tank 207.1 (AOC UST 10)	Diesel Fuel Tank 207.1 was constructed in 1986 for underground storage of diesel fuel in association with the sewage pump station at Building 207. The tank was operated for approximately 11 years and was removed in August 1997, along with 16 feet of associated piping. Soil samples were collected from the excavation pit and excavated soil pile and were analyzed for TPH as diesel, TRPH, and BTEX. The soil sample results were all below the RWQCB screening criteria. The Los Angeles RWQCB submitted a concurrence letter for closure of UST 207.1 in July 1998 and the City of Long Beach Health Department submitted a letter for closure of the site in September 1998. No further action is recommended for AOC UST 10 because closure has been completed and regulatory approval for closure has been received from the RWQCB and the City of Long Beach Health Department.	None	NA	No Further Action
181	Oily Slop Tank 132.1 (AOC UST 14)	UST 132.1 was identified as AOC UST 14, but may also have been connected to two OWS/clarifier units and a holding tank that are addressed as AOC IWS 5 in Section 4.50. Because they may have been connected, AOC IWS 5 (Section 4.50 of this report) addresses all four tanks in this area, including the oily slop/diversion tank, Tank 132.1. Tank 132.1 is was removed in 1999 under the Compliance Program.	None	NA	See AOC IWS 5 (Site Number 50 in this table) for information on AOC UST 14
182	Waste Sludge Tank 301.1 (AOC UST 19)	Waste Sludge Tank 301.1 was constructed in 1952 for underground storage of waste sludge containing battery acid in association with the Service Building located at Building 301. The UST and associated piping were removed in May 1997. Soil samples were collected from the excavation pit, the excavated soil, and the trenches, where associated piping was removed as part of the closure process. The soil sample results were all below the RWQCB screening criteria. The RWQCB submitted a concurrence letter for closure of UST 301.1 in July 1998 and the City of Long Beach Health Department submitted a letter for closure of the site in September 1998. No further action is recommended for AOC UST 19 because closure has been completed and regulatory approval for closure has been received from the RWQCB and the City of Long Beach Health Department.	None	NA	No Further Action
183	Can Crushing Unit (AOC ADD 1)	During the September 1998 site reconnaissance, the AOC ADD 1 location outside Building 102 at the Naval Station was inspected. This AOC, permitted as FTU 11 under the Tiered Permit Program, was no longer present at the location and the concrete pad on which it had sat appeared to be in good condition. The unit crushed only empty rinsed containers that were no larger than 55-gallons in size and that had contained only nonhazardous materials. No further action is recommended for AOC ADD 1 because the unit was only used for empty containers that had previously contained nonhazardous materials. The Navy requested in a 3 April 1998 letter that DTSC approve closure under the Tiered Permit Program.	None	NA	No Further Action
184	Coolant Recovery Tanks, Building 132 (AOC ADD 2)	Four coolant recovery tanks, associated PVC pipes, a filter press, and pumps were located south of Building 132 in a three-sided corrugated metal building. During the September 1998 site reconnaissance, no staining was observed in the concrete bermed area surrounding the tanks and piping. The unit was constructed in the late 1980s or early 1990s but was never used. The filter press was designed to remove metal chips from machinery such as lathes and grinders inside Building 132. No further action is recommended for AOC ADD 2 because the coolant recovery tanks were never used.	None	NA	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
185	Wood Block Floors at Building 50 (AOC ADD 3)	Building 50 was used for general storage, packing, and shipping operations from the 1940s to the 1990s. Wood block floors were located along the north-central and southwestern portions of Building 50. During the December 1998 site reconnaissance, several wood block areas were observed to be oil-stained. Sampling was performed for AOC ADD 3 because wood block floors were oily-stained in several areas. Sampling of two wood blocks (one stained with oil, the other not stained) in the northern portion of the building was performed.	Two Wood Block Samples: VOCs, SVOCs, Metals, PCBs, CN, and TPH. Sampling was performed by the Port of Long Beach and contractors.	**Wood Block Samples:** Five VOCs, 22 SVOCs, TPH-diesel, TPH-motor oil, and PCBs were detected in one or more of the two wood block samples. Twelve of 17 metals were detected in at least one sample. No screening criteria were exceeded.	No Further Action. The wood block floors have been disposed of by the Port of Long Beach contractors in accordance with local, state, and federal regulations.
186	Building 109 (AOC ADD 4)	Building 109 was a mold (i.e., pattern) shop, welding school, and paint shop at different times. Outside the northern end of Building 109, three aboveground process tanks were used for paint removal operations: an aluminum stripping tank, a steel stripping tank, and an associated rinse tank. The aluminum stripping tank contained approximately 4,400 gallons of paint and varnish remover, and the steel stripping tank contained approximately 4,400 gallons of sodium hydroxide solution. The paint removal operations began in the 1940s, and the process tanks were most likely removed in 1984 when Building 211 was constructed. Sampling was performed for AOC ADD 4 because process tank operations were conducted from the 1940s to the 1980s, and these operations may have included the past use of solvents that may have spilled or leaked to soil and groundwater beneath the pavement via cracks. The collection of soil and groundwater samples north of Building 109 was performed.	2 soil and 2 groundwater samples: VOCs, SVOCs, metals, pH	**Soil Samples:** One SVOC (pyrene) was detected. VOCs were not detected. The twelve of 17 metals were detected. No analytes exceeded screening criteria. **Groundwater Samples:** VOCs and SVOCs were not detected. Nine of 17 metals were detected, but none exceeded screening criteria. The pH was within the screening criteria range.	No Further Action
187	Process Tanks at Building 131 (AOC ADD 5)	Building 131 was used from 1940 to 1944 as a Heavy Materials Storage Warehouse, then it was converted to a Pipefitting Shop and used as such for at least 20 years. Five aboveground pipe cleaning dip tanks at the north central end of Building 130 and three aboveground paint stripping tanks were used in association with these operations. The five pipe cleaning tanks consisted of a caustic tank, a degreasing tank, a muriatic acid tank, a sulfuric acid tank, and a rinse tank. The three pipe paint stripping tanks, formerly in the north central room, were no longer onsite and it is unknown when they were removed. These three tanks consisted of an aluminum stripping tank, an acid tank, and a rinse tank. Chemicals used during the operation of the pipe cleaning and paint stripping tanks include caustic soda, hydrochloric acid, sulfuric acid, chlorinated solvents, phenols, and sodium chromate. Sampling was performed for AOC ADD 5 because operations had been conducted since the 1940s, solvents and acids were used, and the spill and leak history is unknown. Soil and groundwater sampling from locations in the north and central portions of Building 131 was performed.	5 soil and 4 groundwater samples: VOCs, SVOCs, metals, TPH, and pH	**Soil Samples:** Three VOCs, TPH-diesel, TPH-motor oil, and fourteen of 17 metals were detected, but none exceeded screening criteria. SVOCs and TPH-gasoline were not detected. **Groundwater Samples:** Four VOCs, one SVOC, TPH-diesel, and nine of 17 samples were detected in at least one of the groundwater samples, but none exceeded screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
188	Floor Drain at Building P-11 (AOC ADD 6)	During the 27 October 1998 site walk, a 1-foot by 1-foot open drain in the asphalt pavement was observed outside the southeast corner of Building P-11. Building P-11 was identified by closure documentation as a warehouse. During the December 1998 site reconnaissance, the drain was filled with soil/sediment and a small amount of standing liquid that was green. The former use of the drain and its discharge location are unknown. Two one-inch diameter pipes with faucets (likely for water) were attached to the building above the drain. Sampling was performed for AOC ADD 6 because little information is known about the past operations. Soil and groundwater sampling was performed to identify potential contamination.	One soil, one groundwater, one sludge, and one liquid sample: VOCs, SVOCs, metals, PCBs, and TPH. Sampling was performed by the Port of Long Beach and contractors.	**Soil Sample:** No organic compounds were detected in the soil sample. Twelve of 17 metals were detected, but none exceeded screening criteria. **Groundwater Sample:** TPH-motor oil and the VOC MTBE were detected in the groundwater sample, but not above screening criteria. No VOCs or PCBs were detected. Seven of 17 metals were detected in groundwater, but none exceeded screening criteria.	No Further Action for Soil and Groundwater
				Sludge Sample: One organic compound, BEHP, was detected in the sludge sample, but did not exceed screening criteria. Fifteen of the 17 metals were detected. Lead exceeded the STLC criteria. **Liquid Sample:** No SVOCs were detected in the liquid sample and the pH was 6.02. Fourteen of the 17 metals were detected in the liquid sample, but only cadmium and copper exceeded screening criteria.	No Further Action because the Sludge and Liquid have been removed by the Port of Long Beach.

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
189	Sump at Warehouse A (AOC ADD 7)	A 3-foot wide by 10-foot long by 2-foot deep sump was identified during the 27 October 1998 site walk inside a building addition located in the southeastern portion of Warehouse A. The exact use of the sump is unknown. A metal parts steam-cleaning operation involving three metal aboveground tanks used for paint stripping was previously located outside the southeastern corner of Warehouse A and the sump may have been used in conjunction with these operations. No AST's were observed during the December 1998 site reconnaissance and it is unknown when these tanks were removed. The addition to Warehouse A may have been built after these operations were ceased and the sump was left in place. These tanks discharged approximately 385 gallons per month to a 15-inch storm drain. Reportedly, modifications were made to the operations to redirect discharge liquids to the sanitary sewer after 1969. Discharge liquids contained moderately alkaline solutions, chlorinated solvents, phenols, sodium chromate, and wetting agents. Sampling was performed for AOC ADD 7 because past metal cleaning operations that used solvents and other hazardous materials may have been associated with the sump. Soil and groundwater sampling was performed to identify potential contamination.	One soil and one groundwater sample: VOCs, SVOCs, metals, CN, PCBs, TPH, pH. Sampling was performed by the Port of Long Beach and contractors.	**Soil Sample:** No organic compounds were detected in the soil sample. Eleven of 17 metals analyzed were detected, but none exceeded screening criteria. **Groundwater Sample:** Oil and grease was detected in the groundwater sample, but not above screening criteria. No VOCs, SVOCs, CN, or PCBs were detected. Eleven of 17 metals analyzed were detected in groundwater, but not above screening criteria.	No Further Action
190	Storage Area Temporary Building 2 (AOC ADD 8)	Temporary Building 2 (west of Building 210) had an asphalt floor and a grated storm drain catch basin located inside. During the December 1998 site reconnaissance, some surface staining was observed on the asphalt floor. The materials stored in Temporary Building 2 are unknown. No evidence of past storage activities was found. Sampling was performed for AOC ADD 8 because the types and quantities of materials stored in Temporary Building 2 are unknown and a storm drain catch basin, to which wastes may have entered, is located in the building. Soil and groundwater sampling was performed to identify potential contamination.	One soil and one groundwater sample: VOCs, SVOCs, metals, PCBs, TPH, pH	**Soil Sample:** TPH-diesel, TPH-motor oil, and the PCB Aroclor-1260 were detected in the soil sample. No VOCs, SVOCs, or TPH-gasoline were detected. The pH for the soil sample was measured at 8.14. Twelve of 17 metals were detected the soil sample. No results exceeded screening criteria. **Groundwater Sample:** No organic compounds were detected in the groundwater sample. The pH for the groundwater sample was measured at 7.36. Four of 17 metals were detected, but none exceeded screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
191	Storage Area Temporary Building 3 (AOC ADD 9)	Temporary Building 3 (west of Building 210) had an asphalt floor and asphalt curbs segregating the floor into sections. The materials previously stored in Temporary Building 3 are unknown. During the December 1998 site reconnaissance, no evidence of past storage activities was found except for approximately 20 bags of absorbent material located inside the entrance of the building and asphalt curbs that suggested segregation of materials. Sampling was performed for AOC ADD 9 because the types and quantities of materials previously stored in Temporary Building 3 are unknown. Soil and groundwater sampling was performed to identify any potential contamination.	Two soil and two groundwater samples: VOCs, SVOCs, metals, PCBs, and TPH	**Soil Samples:** TPH-diesel, TPH-motor oil and PCBs were detected in at least one of the soil samples. No VOCs, SVOCs, or TPH-gasoline were detected. The pH was detected at 8.63 and 8.98. Twelve of 17 metals were detected in one or more of the soil samples. No analytes exceeded screening criteria. **Groundwater Samples:** The VOC cis-1,2-DCE was detected in both of the groundwater samples, but not above screening criteria. No SVOCs, TPH-gasoline, TPH-diesel, TPH-motor oil, or PCBs were detected. The pH was measured at 7.29 and 7.30. Four of 17 metals were detected, but none were above screening criteria.	No Further Action
192	Sandblast Hopper/Conveyor System (AOC ADD 10)	Two silos, a conveyor system, and an associated subsurface hopper were located southeast of Building 129. During the January 1999 site reconnaissance, the silos and hopper were no longer in use. During past operations, new abrasive blast grit was dropped into the hopper from a rail car and lifted to the silos via the conveyor system. The lined hopper stored only new, unused blast material. No wastes were generated from these operations. No further action is recommended for AOC ADD 10 because only new, unused sandblast grit was placed into the lined hopper.	None	NA	No Further Action
193	Mercury Manometers (AOC ADD 11)	Approximately 16 mercury manometers, which consisted of a glass tube filled with mercury, are located throughout LBNSY. The manometers were used to measure water pressures associated with drydock and lift station operations. It is not known whether past breakage and spills from the mercury manometers occurred. No further action is recommended for AOC ADD 11 because a very small volume of mercury was contained in the manometers, the tubes were sealed, and no documentation of spills was identified. Regulatory agencies agreed during a 20 January 1999 site walk that no sampling was required.	None	NA	No Further Action
194	Mercury Gage Repair Area, Building 197 (AOC ADD 12)	During the January 1999 site reconnaissance, the former mercury gage repair area, located in the northwestern corner of Building 197 on Pier E, was no longer in operation. In the past, the area was used to repair and calibrate instruments and gages containing mercury. Sampling was performed for AOC ADD 12 to assess whether or not mercury may have leaked from the floor sink drain or pit outside Building 197.	Three soil and three groundwater samples: mercury.	**Soil Samples:** Mercury was detected in one of the three soil samples, but below the screening criteria. **Groundwater Samples:** Mercury was detected in all three groundwater samples, but below the screening criteria.	No Further Action

Table 5-1 (continued)
Conclusions and Recommendations

No.[a]	Description	PA Findings and Conclusions	Samples and Analyses	Sampling Findings and Conclusions	Recommendations
195	Mercury-Sealed Motor Pump Stand Area, Building 104 (AOC ADD 13)	The mercury-sealed motor pump stand area located south of Building 104 consisted of a concrete bermed area, a pump stand, a drydock pump, and a spill pan. The pump stand was used to disassemble and service submersible pumps that were used to dewater Drydocks 2 and 3. Approximately 22 pounds of mercury were contained in the repaired pumps. Mercury was removed, filtered, and returned to the pumps during the repair activities. Spilled mercury (less than 5 pounds per year) was collected in the spill pan and disposed of as hazardous waste. Sampling was performed at AOC ADD 13 to evaluate if any residual mercury or other metal contamination exists in the surface sediment found within the berm and the spill pan. In addition, a sediment sample was collected from the closest catch basin to assess whether or not any mercury or other metals may have been carried by storm water to the storm drain system.	Spill pan sediment sample: metals. Two other sediment samples: VOCs, SVOCs, TPH, PCBs and metals.	**Sediment Samples:** VOCs, SVOCs, TPH-diesel, TPH-oil, and PCBs were detected in at least one of the samples. Fourteen of the 17 metals were detected in at least one of the sediment samples. TPH-diesel, TPH-motor oil, PCBs, mercury, arsenic, chromium, lead, and zinc were detected at concentrations that exceeded their respective screening criteria in one or more of the sediment samples.	Further Action is recommended. The sediment located within the spill pan, the bermed area sump, and the nearby storm drain catch basin should be removed and disposed of as hazardous waste.
196	Mercury-Sealed Motor Pump Stand Area, Building 150 (AOC ADD 14)	The mercury-sealed motor pump stand area located south of Building 150 consisted of a concrete bermed area, a pump stand, a drydock pump, and a spill pan. The pump stand was used to disassemble and repair submersible pumps that were used to dewater Drydock 1. Approximately 18 pounds of mercury were contained in the repaired pumps. Mercury was removed, filtered, and returned to the pumps during the repair activities. Spilled mercury (less than 5 pounds per year) was collected in the spill pan and disposed of as hazardous waste. Sampling was performed at AOC ADD 14 to evaluate if any residual mercury or other metal contamination exists in the surface sediment found within the berm and the spill pan. In addition, a sediment sample was also collected from the closest catch basin to assess whether or not any mercury or other metals may have been carried by storm water to the storm drain system.	Four sediment samples: metals	**Sediment Samples:** Fourteen of the 17 metals were detected in the sediment samples. Mercury, arsenic, chromium, copper, lead, and zinc were detected at concentrations that exceeded their respective screening criteria. The highest concentrations were typically in the sample from the berm sump sediment.	Further Action is recommended. The sediment located within the spill pans, the bermed area, the sump within the berm, and the nearby catch basin should be removed and disposed of as hazardous waste.

Notes:

(a) Also Section 4 tab number.
(b) One sample at AOC PT 1 for SVOCs analysis to test for the presence of pentachlorophenol in case wood preservation activities were conducted.
(c) One sample for dioxins and furans analysis to assess whether the high temperature may have caused dioxins or furans to be formed.

ADD = Additional
AOC = Area of Concern
BBP = Butyl Benzyl Phthalate
BEHP = Bis (2-ethylhexyl) phthalate
bgs = below ground surface
BOWTS = Bilge and Oily Wastewater Treatment System
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
CFR = Code of Federal Regulations
CN = Cyanide
Cr+6 = Hexavalent Chromium
DCE = Dichloroethylene
DOP = Di-octyl Phthalate
DTSC = (California)Department of Toxic Substances Control
FTU = Fixed Treatment Unit
HIST = Historical
HWF = Hazardous Waste Facility
IWS = Industrial Wastewater System
IWTP = Industrial Wastewater Treatment Plant
LIW = Liquid Industrial Waste
LBNC = Long Beach Naval Complex
LBNSY = Long Beach Naval Shipyard
MTBE = Methyl Tertiary Butyl Ether
NA = Not Applicable
NPDES = National Pollutant Discharge Elimination System
OWS = Oil/Water Separator
PA = Preliminary Assessment
PCBs = Polychlorinated Biphenyls
ppm = parts per million
PT = Process Tank
PVC = Polyvinyl Chloride
RCRA = Resource Conservation and Recovery Act
SSS = Sanitary Sewer System
SVOCs = Semivolatile Organic Compounds
RWQCB = Regional Water Quality Control Board
TBP = To Be Produced
TCE = Trichloroethylene
TCLP = Toxicity Characteristic Leaching Procedure
TPH = Total Petroleum Hydrocarbons
TRPH = Total Recoverable Petroleum Hydrocarbons
TSDF = Treatment, Storage, and Disposal Facility
URSGWC = URS Greiner Woodward Clyde

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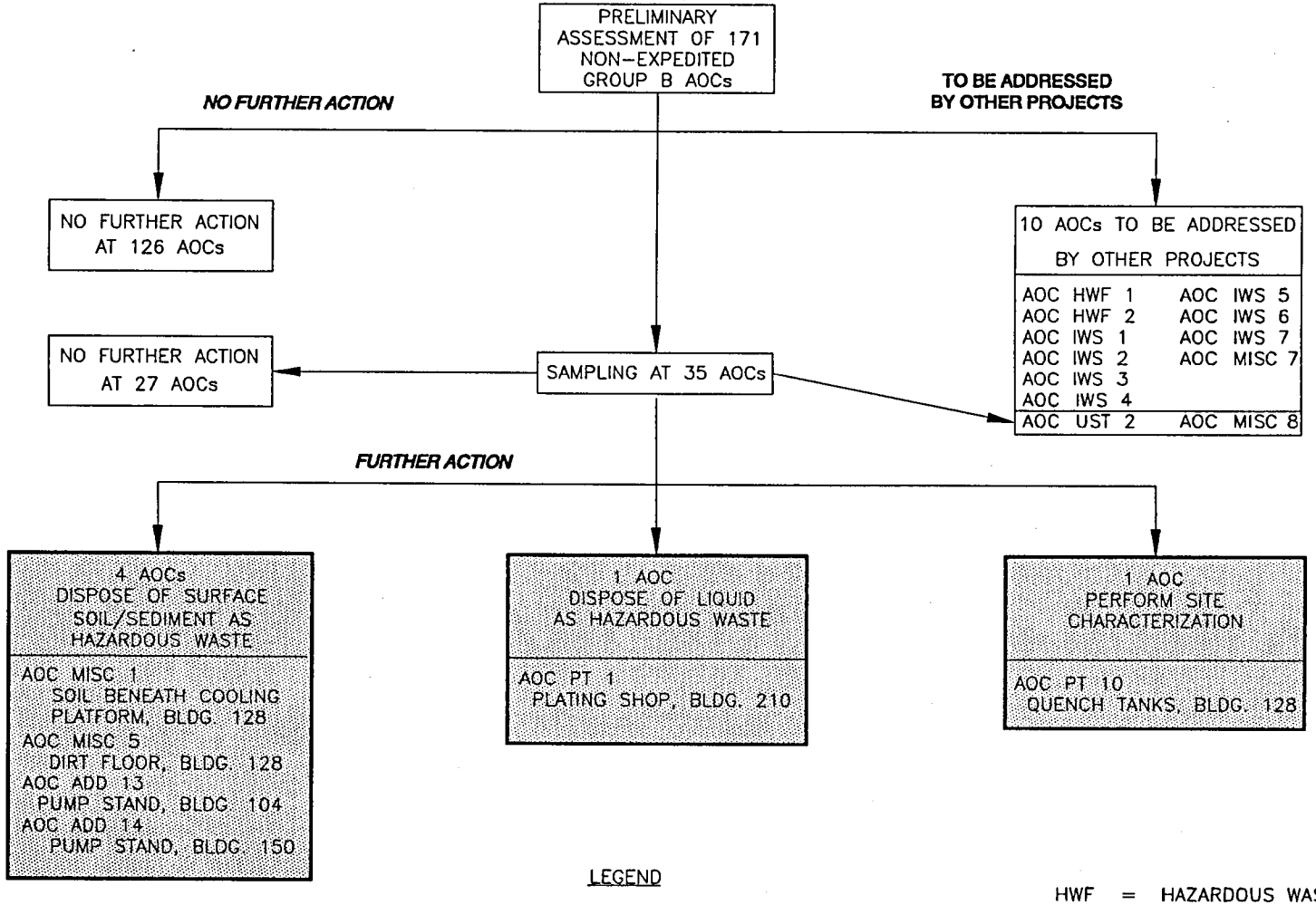

LEGEND

AOC	=	AREA OF CONCERN	HWF	=	HAZARDOUS WASTE FACILITY
ADD	=	ADDITIONAL	IWS	=	INDUSTRIAL WASTEWATER SYSTEM
BLDG.	=	BUILDING	PT	=	PROCESS TANK
HIST	=	HISTORICAL	MISC	=	MISCELLANEOUS
			UST	=	UNDERGROUND STORAGE TANK

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: 5/2000
FN: 5-1

MODIFIED BY: J. Brown
PROJECT NO. 6210-014

SUMMARY OF RECOMMENDATIONS FOR 171 NON-EXPEDITED GROUP B AREAS OF CONCERN

FIGURE
5-1

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FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 3 of 6
Appendices A through N

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

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14 April 2000

APPENDIX A

SCREENING CRITERIA

APPENDIX A
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Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

TOXICITY INFORMATION / CONTAMINANT / PRELIMINARY REMEDIAL GOALS (PRGs) / SOIL SCREENING LEVELS

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
8.7E-03 i	4.0E-03 i	8.7E-03 r	4.0E-03 r	0	0.10	30560-19-1	Acephate	5.1E+01 ca**	3.4E+02 ca*	7.7E-01 ca*	7.7E+00 ca*		6.0E+01
7.7E-03 r	2.6E-03 r	7.7E-03 i	2.6E-03 i	1	0.10	75-07-0	Acetaldehyde	9.2E+00 ca**	2.2E+01 ca**	8.7E-01 ca*	1.5E+00 ca*		
	2.0E-02 i		2.0E-02 r	0	0.10	34256-82-1	Acetochlor	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.0E-01 i		1.0E-01 r	1	0.10	67-64-1	Acetone	1.4E+03 nc	6.1E+03 nc	3.7E+02 nc	6.1E+02 nc	1.6E+01	8.0E-01
	8.0E-04 h		2.9E-03 x	0	0.10	75-86-5	Acetone cyanohydrin	4.4E+01 nc	8.6E+02 nc	1.0E+01 nc	2.9E+01 nc		
	6.0E-03 i		1.4E-02 h	1	0.10	75-05-8	Acetonitrile	2.0E+02 nc	1.3E+03 nc	5.2E+01 nc	7.1E+01 nc		
	1.0E-01 i		5.7E-06 x	1	0.10	98-86-2	Acetophenone	4.9E-01 nc	1.6E+00 nc	2.1E-02 nc	4.2E-02 nc		
1.1E-01 o	1.3E-02 i	1.1E-01 r	1.3E-02 r	0	0.10	50594-66-6	Acifluorfen	4.0E+00 ca	2.7E+01 ca	6.1E-02 ca	6.1E-01 ca		
	2.0E-02 h		5.7E-06 i	1	0.10	107-02-8	Acrolein	1.0E-01 nc	3.4E-01 nc	2.1E-02 nc	4.2E-02 nc		
4.6E+00 i	2.0E-04 i	4.6E+00 i	2.0E-04 r	0	0.10	79-06-1	Acrylamide	9.8E-02 ca	6.6E-01 ca	1.5E-03 ca	1.5E-02 ca		
	5.0E-01 i		2.9E-04 i	0	0.10	79-10-7	Acrylic acid	2.6E+04 nc	4.2E+05 nc	1.0E+00 nc	1.8E+04 nc		
5.4E-01 i	1.0E-03 h	2.4E-01 i	5.7E-04 i	1	0.10	107-13-1	Acrylonitrile	1.9E-01 ca*	4.9E-01 ca*	2.8E-02 ca*	3.7E+00 ca*		
8.1E-02 h	1.0E-02 i	8.0E-02 r	1.0E-02 r	0	0.10	15972-60-8	Alachlor	5.5E+00 ca*	3.7E+01 ca	8.4E-02 ca	8.4E-01 ca		
	1.5E-01 i		1.5E-01 r	0	0.10	1596-84-5	Alar	8.2E+03 nc	1.6E+05 nc	5.5E+02 nc	5.5E+03 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	116-06-3	Aldicarb	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	1646-88-4	Aldicarb sulfone	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
1.7E+01 i	3.0E-05 i	1.7E+01 i	3.0E-05 r	0	0.10	309-00-2	Aldrin	2.6E-02 ca*	1.8E-01 ca	3.9E-04 ca	4.0E-03 ca	1.2E+04	5.9E+02
	2.5E-01 i		2.5E-01 r	0	0.10	5585-64-8	Ally	1.4E+04 nc	1.0E+05 max	9.1E+02 nc	9.1E+03 nc		
	5.0E-03 x		5.0E-03 r	0	0.10	107-18-6	Allyl alcohol	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	5.0E-02 h		2.9E-04 i	0	0.10	107-05-1	Allyl chloride	2.7E+03 nc	5.2E+04 nc	1.0E+00 nc	1.8E+03 nc		
	1.0E+00 n			0	0.01	7429-90-5	Aluminum	7.5E+04 nc	1.0E+05 max		3.7E+04 nc		
	4.0E-04 i			0	0.01	20859-73-8	Aluminum phosphide	3.0E+01 nc	7.5E+02 nc		1.5E+01 nc		
	3.0E-04 i		3.0E-04 r	0	0.10	67485-29-4	Amdro	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
	9.0E-03 i		9.0E-03 r	0	0.10	834-12-8	Ametryn	4.9E+02 nc	9.6E+03 nc	3.3E+01 nc	3.3E+02 nc		
	7.0E-02 h		7.0E-02 r	0	0.10	591-27-5	m-Aminophenol	3.8E+03 nc	7.5E+04 nc	2.6E+02 nc	2.6E+03 nc		
	2.0E-05 h		2.0E-05 r	0	0.10	504-24-5	4-Aminopyridine	1.1E+00 nc	2.1E+01 nc	7.3E-02 nc	7.3E-01 nc		
	2.5E-03 i		2.5E-03 r	0	0.10	33089-61-1	Amitraz	1.4E+02 nc	2.7E+03 nc	9.1E+00 nc	9.1E+01 nc		
			2.9E-02 i	n/a	n/a	7664-41-7	Ammonia			1.0E+02 nc			
	2.0E-01 i			0	0.10	7773-06-0	Ammonium sulfamate	1.1E+04 nc	1.0E+05 max		7.3E+03 nc		
5.7E-03 i	7.0E-03 n	5.7E-03 r	2.9E-04 i	0	0.10	62-53-3	Aniline	7.8E+01 ca**	5.3E+02 ca*	1.0E+00 nc	1.2E+01 ca*		
	4.0E-04 i			0	0.01	7440-36-0	Antimony and compounds	3.0E+01 nc	7.5E+02 nc		1.5E+01 nc	5.0E+00	3.0E-01
	5.0E-04 h			0	0.01	1314-60-9	Antimony pentoxide	3.7E+01 nc	9.4E+02 nc		1.8E+01 nc		
	9.0E-04 h			0	0.01	28300-74-5	Antimony potassium tartrate	6.7E+01 nc	1.7E+03 nc		3.3E+01 nc		
	4.0E-04 h			0	0.01	1332-81-6	Antimony tetroxide	3.0E+01 nc	7.5E+02 nc		1.5E+01 nc		
	4.0E-04 h			0	0.01	1309-64-4	Antimony trioxide	3.0E+01 nc	7.5E+02 nc		1.5E+01 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	74115-24-5	Apollo	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
2.5E-02 i	5.0E-02 h	2.5E-02 i	5.0E-02 r	0	0.10	140-57-8	Aramite	1.8E+01 ca	1.2E+02 ca	2.7E-01 ca	2.7E+00 ca		
	3.0E-04 i			0	0.03	7440-38-2	Arsenic (noncancer endpoint)	2.1E+01 nc	4.8E+02 nc				
1.5E+00 i	3.0E-04 i	1.5E+01 i		0	0.03	7440-38-2	Arsenic (cancer endpoint)	3.8E-01 ca*	3.0E+00 ca	4.5E-04 ca	4.5E-02 ca	2.9E+01	1.0E+00
			1.4E-05 i	n/a	n/a	7784-42-1	Arsine (see arsenic for cancer endpoint)			5.2E-02 nc			
	9.0E-03 i		9.0E-03 r	0	0.10	76578-12-6	Assure	4.9E+02 nc	9.6E+03 nc	3.3E+01 nc	3.3E+02 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	3337-71-1	Asulam	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
2.2E-01 h	3.5E-02 h	2.2E-01 r	3.5E-02 h	0	0.10	1912-24-9	Atrazine	2.0E+00 ca	1.3E+01 ca	3.1E-02 ca	3.0E-01 ca		
	4.0E-04 i		4.0E-04 r	0	0.10	71751-41-2	Avermectin B1	2.2E+01 nc	4.3E+02 nc	1.5E+00 nc	1.5E+01 nc		
1.1E-01 i		1.1E-01 i		0	0.10	103-33-3	Azobenzene	4.0E+00 ca	2.7E+01 ca	6.2E-02 ca	6.1E-01 ca		
	7.0E-02 i		1.4E-04 h	0	0.01	7440-39-3	Barium and compounds	5.2E+03 nc	1.0E+05 max	5.2E-01 nc	2.6E+03 nc	1.6E+03	8.2E+01
	4.0E-03 i		4.0E-03 r	0	0.10	114-26-1	Baygon	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc		
	3.0E-02 i		3.0E-02 r	0	0.10	43121-43-3	Bayleton	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

TOXICITY INFORMATION

SOIL SCREENING LEVELS

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
	2.5E-02 i		2.5E-02 r	0	0.10	68359-37-5	Baythroid	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	3.0E-01 i		3.0E-01 r	0	0.10	1861-40-1	Benefin	1.6E+04 nc	1.0E+05 max	1.1E+03 nc	1.1E+04 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	17804-35-2	Benomyl	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	3.0E-02 i		3.0E-02 r	0	0.10	25057-89-0	**Bentazon**	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	100-52-7	Benzaldehyde	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
2.9E-02 i	3.0E-03 n	2.9E-02 i	1.7E-03 n	1	0.10	71-43-2	**Benzene**	6.2E-01 ca*	1.4E+00 ca*	2.3E-01 ca*	3.9E-01 ca*	3.0E-02	2.0E-03
2.3E+02 i	3.0E-03 i	2.3E+02 i	3.0E-03 r	0	0.10	92-87-5	Benzidine	1.9E-03 ca	1.3E-02 ca	2.9E-05 ca	2.9E-04 ca		
	4.0E+00 i		4.0E+00 i	0	0.10	65-85-0	Benzoic acid	1.0E+05 max	1.0E+05 max	1.5E+04 nc	1.5E+05 nc	4.0E+02	2.0E+01
1.3E+01 i		1.3E+01 r		0	0.10	98-07-7	Benzotrichloride	3.4E-02 ca	2.3E-01 ca	5.2E-04 ca	5.2E-03 ca		
	3.0E-01 h		3.0E-01 r	0	0.10	100-51-6	Benzyl alcohol	1.6E+04 nc	1.0E+05 max	1.1E+03 nc	1.1E+04 nc		
1.7E-01 i		1.7E-01 r		1	0.10	100-44-7	Benzyl chloride	8.1E-01 ca	2.2E+00 ca	4.0E-02 ca	6.6E-02 ca		
	2.0E-03 i	8.4E+00 i	5.7E-06 i	0	0.01	7440-41-7	**Beryllium and compounds**	1.5E+02 nc	3.4E+03 nc	8.0E-04 ca*	7.3E+01 nc	6.3E+01	3.0E+00
	1.0E-04 i		1.0E-04 r	0	0.10	141-66-2	Bidrin	5.5E+00 nc	1.0E+00 nc	3.7E-01 nc	3.7E+00 nc		
	1.5E-02 i		1.5E-02 r	0	0.10	82657-04-3	Biphenthrin (Talstar)	8.2E+02 nc	1.6E+04 nc	5.5E+01 nc	5.5E+02 nc		
	5.0E-02 i		5.0E-02 r	1	0.10	92-52-4	**1,1-Biphenyl**	2.3E+03 nc	2.4E+04 nc	1.8E+02 nc	3.0E+02 nc		
1.1E+00 i		1.2E+00 i		1	0.10	111-44-4	Bis(2-chloroethyl)ether	1.8E-01 ca	5.6E-01 ca	5.8E-03 ca	9.8E-03 ca	4.0E-04	2.0E-05
7.0E-02 h	4.0E-02 i	3.5E-02 h	4.0E-02 r	1	0.10	39638-32-9	Bis(2-chloroisopropyl)ether	2.5E+00 ca	7.4E+00 ca	1.9E-01 ca	2.7E-01 ca		
2.2E+02 i		2.2E+02 i		1	0.10	542-88-1	Bis(chloromethyl)ether	1.9E-04 ca	4.3E-04 ca	3.1E-05 ca	5.2E-05 ca		
7.0E-02 h		3.5E-02 h		0	0.10	108-60-1	Bis(2-chloro-1-methylethyl)ether	6.3E+00 ca	4.3E+01 ca	1.9E-01 ca	9.6E-01 ca		
1.4E-02 i	2.0E-02 i	1.4E-02 r	2.2E-02 r	0	0.10	117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	3.2E+01 ca*	2.1E+02 ca	4.8E-01 ca	4.8E+00 ca		
	5.0E-02 i		5.0E-02 r	0	0.10	80-05-7	Bisphenol A	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	9.0E-02 i		5.7E-03 h	0	0.10	7440-42-8	Boron	4.9E+03 nc	9.6E+04 nc	2.1E+01 nc	3.3E+03 nc		
			2.0E-04 h	0	0.10	7637-07-2	Boron trifluoride			7.3E-01 nc			
	2.0E-02 n		2.9E-03 n	1	0.10	SU 108-86-1	**Bromobenzene**	2.8E+01 nc	9.2E+01 nc	1.0E+01 nc	2.0E+01 nc		
6.2E-02 i	2.0E-02 i	6.2E-02 r	2.0E-02 r	1	0.10	75-27-4	Bromodichloromethane	9.8E-01 ca	2.3E+00 ca	1.1E-01 ca	1.8E-01 ca	6.0E-01	3.0E-02
7.9E-03 i	2.0E-02 i	3.9E-03 i	2.0E-02 r	0	0.10	75-25-2	Bromoform (tribromomethane)	5.6E+01 ca*	3.8E+02 ca*	1.7E+00 ca*	8.5E+00 ca*	8.0E-01	4.0E-02
	1.4E-03 i		1.4E-03 i	1	0.10	74-83-9	Bromomethane (Methyl bromide)	3.8E+00 nc	1.3E+01 nc	5.2E+00 nc	8.7E+00 nc	2.0E-01	1.0E-02
				0	0.10	101-55-3	4-Bromophenyl phenyl ether						
	5.0E-03 h		5.0E-03 r	0	0.10	2104-96-3	Bromophos	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	1689-84-5	Bromoxynil	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	1.8E+02 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	1689-99-2	Bromoxynil octanoate	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
9.8E-01 r		9.8E-01 i		1	0.10	106-99-0	1,3-Butadiene	6.5E-03 ca	1.4E-02 ca	6.9E-03 ca	1.1E-02 ca		
	1.0E-01 i		1.0E-01 r	0	0.10	71-36-3	1-Butanol	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc	1.7E+01	9.0E-01
	5.0E-02 i		5.0E-02 r	0	0.10	2008-41-5	Butylate	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	1.0E-02 n		1.0E-02 r	1	0.10	104-51-8	**n-Butylbenzene**	1.3E+02 nc	5.5E+02 nc	3.7E+01 nc	6.1E+01 nc		
	1.0E-02 n		1.0E-02 r	1	0.10	135-9-88	**sec-Butylbenzene**	1.0E+02 nc	4.1E+02 nc	3.7E+01 nc	6.1E+01 nc		
	1.0E-02 n		1.0E-02 r	1	0.10	104-5-18	**tert-Butylbenzene**	1.2E+02 nc	4.9E+02 nc	3.7E+01 nc	6.1E+01 nc		
	2.0E-01 i		2.0E-01 r	0	0.10	85-68-7	Butyl benzyl phthalate	9.3E+02 sat	9.3E+02 sat	7.3E+02 nc	7.3E+03 nc	9.3E+02	8.1E+02
	1.0E+00 i		1.0E+00 r	0	0.10	85-70-1	Butylphthalyl butylglycolate	5.5E+04 nc	1.0E+05 max	3.7E+03 nc	3.7E+04 nc		
	3.0E-03 h		3.0E-03 r	0	0.10	75-60-5	Cacodylic acid	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
	5.0E-04 i	6.3E+00 i	5.7E-05 x	0	0.01	7440-43-9	Cadmium and compounds	3.7E+01 nc	9.3E+02 nc	1.1E-03 ca	1.8E+01 nc	8.0E+00	4.0E-01
							"CAL-Modified PRG" (PEA, 1994)	9.0E+00					
	5.0E-01 i		5.0E-01 r	0	0.10	105-60-2	Caprolactam	2.7E+04 nc	1.0E+05 max	1.8E+03 nc	1.8E+04 nc		
8.6E-03 h	2.0E-03 i	8.6E-03 r	2.0E-03 r	0	0.10	2425-06-1	Captafol	5.2E+01 ca**	3.5E+02 ca**	7.8E-01 ca*	7.8E+00 ca*		
3.5E-03 h	1.3E-01 i	3.5E-03 r	1.3E-01 r	0	0.10	133-06-2	Captan	1.3E+02 ca*	8.6E+02 ca	1.9E+00 ca	1.9E+01 ca		
	1.0E-01 i		1.1E-01 r	0	0.10	63-25-2	Carbaryl	5.5E+03 nc	1.1E+05 nc	4.0E+02 nc	3.7E+03 nc		
2.0E-02 h		2.0E-02 r		0	0.10	86-74-8	Carbazole	2.2E+01 ca	1.5E+02 ca	3.4E-01 ca	3.4E+00 ca	6.0E-01	3.0E-02
	5.0E-03 i		5.0E-03 r	0	0.10	1563-66-2	Carbofuran	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

TOXICITY INFORMATION

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
	1.0E-01 i		2.0E-01 i	I	0.10	75-15-0	Carbon disulfide	3.5E+02 nc	1.2E+03 nc	7.3E+02 nc	1.0E+03 nc	3.2E+01	2.0E+00
1.3E-01 i	7.0E-04 i	5.3E-02 i	5.7E-04 x	I	0.10	56-23-5	Carbon tetrachloride	2.3E-01 ca**	5.2E-01 ca*	1.3E-01 ca*	1.7E-01 ca*	7.0E-02	3.0E-03
	1.0E-02 i		1.0E-02 r	0	0.10	55285-14-8	Carbosulfan	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	5234-68-4	Carboxin	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	302-17-0	Chloral	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	1.5E-02 i		1.5E-02 r	0	0.10	133-90-4	Chloramben	8.2E+02 nc	1.6E+04 nc	5.5E+01 nc	5.5E+02 nc		
4.0E-01 h		4.0E-01 r		0	0.10	118-75-2	Chloranil	1.1E+00 ca	7.4E+00 ca	1.7E-02 ca	1.7E-01 ca		
3.5E-01 i	5.0E-04 i	3.5E-01 i	2.3E-05 i	0	0.04	57-74-9	Chlordane	1.6E+00 ca*	1.2E+01 ca*	1.9E-02 ca**	1.9E-01 ca*	1.0E+01	5.0E-01
	2.0E-02 i		2.0E-02 r	0	0.10	90982-32-4	Chlorimuron-ethyl	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.0E-01 i			0	0.01	7782-50-5	Chlorine				3.7E+03 nc		
			5.7E-05 i	n/a	n/a	10049-04-4	Chlorine dioxide			2.1E-01 nc			
				I	0.10	107-20-0	Chloroacetaldehyde						
	2.0E-03 h		2.0E-03 r	0	0.10	79-11-8	Chloroacetic acid	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	8.6E-06 r		8.6E-06 i	I	0.10	SU 532-27-4	2-Chloroacetophenone	3.2E-02 nc	1.1E-01 nc	3.1E-02 nc	5.2E-02 nc		
	4.0E-03 i		4.0E-03 r	0	0.10	106-47-8	4-Chloroaniline	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc	7.0E-01	3.0E-02
	2.0E-02 i		5.7E-03 h	I	0.10	108-90-7	Chlorobenzene	5.4E+01 nc	1.8E+02 nc	2.1E+01 nc	3.9E+01 nc	1.0E+00	7.0E-02
2.7E-01 h	2.0E-02 i	2.7E-01 h	2.0E-02 r	0	0.10	510-15-6	Chlorobenzilate	1.6E+00 ca	1.1E+01 ca	2.5E-02 ca	2.5E-01 ca		
	2.0E-01 h		2.0E-01 r	0	0.10	74-11-3	p-Chlorobenzoic acid	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
	2.0E-02 h		2.0E-02 r	0	0.10	98-56-6	4-Chlorobenzotrifluoride	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	2.0E-02 h		2.0E-03 h	I	0.10	126-99-8	2-Chloro-1,3-butadiene	3.6E+00 nc	1.2E+01 nc	7.3E+00 nc	1.4E+01 nc		
	4.0E-01 h		4.0E-01 r	I	0.10	SU 109-69-3	1-Chlorobutane	4.8E+02 sat	4.8E+02 sat	1.5E+03 nc	2.4E+03 nc		
	1.4E+01 r		1.4E+01 i	I	0.10	SU 75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	3.4E+02 sat	3.4E+02 sat	5.2E+04 nc	8.7E+04 nc		
	1.4E+01 r		1.4E+01 i	I	0.10	SU 75-45-6	Chlorodifluoromethane	3.4E+02 sat	3.4E+02 sat	5.1E+04 nc	8.5E+04 nc		
				I	0.10	110-75-8	2-Chloroethyl vinyl ether						
6.1E-03 i	1.0E-02 i	8.1E-02 i	1.0E-02 r	I	0.10	67-66-3	Chloroform	2.4E-01 ca	5.2E-01 ca	8.4E-02 ca	1.6E-01 ca	6.0E-01	3.0E-02
1.3E-02 h		6.3E-03 h		I	0.10	74-87-3	Chloromethane	1.2E+00 ca	2.6E+00 ca	1.1E+00 ca	1.5E+00 ca		
5.8E-01 h		5.8E-01 r		0	0.10	95-69-2	4-Chloro-2-methylaniline	7.7E-01 ca	5.2E+00 ca	1.2E-02 ca	1.2E-01 ca		
4.6E-01 h		4.6E-01 r		0	0.10	3165-93-3	4-Chloro-2-methylaniline hydrochloride	9.7E-01 ca	6.5E+00 ca	1.5E-02 ca	1.5E-01 ca		
	8.0E-02 i		8.0E-02 r	I	0.10	91-58-7	beta-Chloronaphthalene	3.7E+03 nc	2.4E+04 nc	2.9E+02 nc	4.9E+02 nc		
2.5E-02 h		2.5E-02 r	r	0	0.10	88-73-3	o-Chloronitrobenzene	1.8E+01 ca	1.2E+02 ca	2.7E-01 ca	2.7E+00 ca		
1.8E-02 h		1.8E-02 r	r	0	0.10	100-00-5	p-Chloronitrobenzene	2.5E+01 ca	1.7E+02 ca	3.7E-01 ca	3.7E+00 ca		
	5.0E-03 i		5.0E-03 r	I	0.10	95-57-8	2-Chlorophenol	5.9E+01 nc	2.4E+02 nc	1.8E+01 nc	3.8E+01 nc	4.0E+00	2.0E-01
	2.9E-02 r		2.9E-02 h	I	0.10	SU 75-29-6	2-Chloropropane	1.6E+02 nc	5.9E+02 nc	1.0E+02 nc	1.7E+02 nc		
1.1E-02 h	1.5E-02 i	1.1E-02 r	1.5E-02 r	0	0.10	1897-45-6	Chlorothalonil	4.0E+01 ca*	2.7E+02 ca*	6.1E-01 ca*	6.1E+00 ca*		
	2.0E-02 i		2.0E-02 r	I	0.10	SU 95-49-8	o-Chlorotoluene	1.5E+02 nc	5.6E+02 nc	7.3E+01 nc	1.2E+02 nc		
	2.0E-01 i		2.0E-01 r	0	0.10	101-21-3	Chlorpropham	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
	3.0E-03 i		3.0E-03 r	0	0.10	2921-88-2	Chlorpyrifos	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
	1.0E-02 h		1.0E-02 r	0	0.10	5598-13-0	Chlorpyrifos-methyl	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	64902-72-3	Chlorsulfuron	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	8.0E-04 h		8.0E-04 r	0	0.10	60238-56-4	Chlorthiophos	4.4E+01 nc	8.6E+02 nc	2.9E+00 nc	2.9E+01 nc		
		4.2E+01 i		0	0.01	n/a	Total Chromium (1/6 ratio Cr VI/Cr III)	2.1E+02 ca	4.5E+02 ca	1.6E-04 ca		3.8E+01	2.0E+00
	5.0E-03 i	2.9E+02 i		0	0.01	7440-47-3	Chromium VI	3.0E+01 ca*	6.4E+01 ca	2.3E-05 ca	1.8E+02 nc	3.8E+01	2.0E+00
							"CAL-Modified PRG" (PEA, 1994)	2.0E-01			1.6E-01		
	6.0E-02 x		5.7E-06 x	0	0.01	7440-48-4	Cobalt	3.3E+03 nc	2.9E+04 nc	2.1E-02 nc	2.2E+03 nc		
		2.2E+00 i		0	0.01	8007-45-2	Coke Oven Emissions			3.1E-03 ca			
	3.7E-02 h			0	0.01	7440-50-8	Copper and compounds	2.8E+03 nc	7.0E+04 nc		1.4E+03 nc		
1.9E+00 h	1.0E-02 x	1.9E+00 x	1.0E-02 r	I	0.10	SU 123-73-9	Crotonaldehyde	5.3E-03 ca	1.1E-02 ca	3.5E-03 ca	5.9E-03 ca		
	1.0E-01 i		1.1E-01 i	I	0.10	98-82-8	Cumene (isopropylbenzene)	1.6E+02 nc	5.2E+02 nc	4.0E+02 nc	6.6E+02 nc		

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SOIL SCREENING LEVELS

TOXICITY INFORMATION							CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs)					
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
8.4E-01 h	2.0E-03 h	8.4E-01 r	2.0E-03 r	0	0.10	21725-46-2	Cyanazine	5.3E-01 ca	3.6E+00 ca	8.0E-03 ca	8.0E-02 ca		
						n/a	Cyanides						
	1.0E-01 h			0	0.10	542-62-1	Barium cyanide	5.5E+03 nc	1.0E+05 max		3.7E+03 nc		
	4.0E-02 i			0	0.10	592-01-8	Calcium cyanide	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
	5.0E-03 i			0	0.10	544-92-3	Copper cyanide	2.7E+02 nc	5.3E+03 nc		1.8E+02 nc		
	4.0E-02 i			0	0.10	460-19-5	Cyanogen	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
	9.0E-02 i			0	0.10	506-68-3	Cyanogen bromide	4.9E+03 nc	1.0E+05 max		3.3E+03 nc		
	5.0E-02 i			0	0.10	506-77-4	Cyanogen chloride	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
	2.0E-02 i			0	0.10	57-12-5	Free cyanide	1.1E+03 nc	2.1E+04 nc		7.3E+02 nc	4.0E+01	2.0E+00
	2.0E-02 i		8.6E-04 i	1	0.10	74-90-8	Hydrogen cyanide	1.1E+01 nc	3.5E+01 nc	3.1E+00 nc	6.2E+00 nc		
	5.0E-02 i			0	0.10	151-50-8	Potassium cyanide	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
	2.0E-01 i			0	0.10	506-61-6	Potassium silver cyanide	1.1E+04 nc	1.0E+05 max		7.3E+03 nc		
	1.0E-01 i			0	0.10	506-64-9	Silver cyanide	5.5E+03 nc	1.1E+05 nc		3.7E+03 nc		
	4.0E-02 i			0	0.10	143-33-9	Sodium cyanide	2.2E+03 nc	4.3E+04 nc		1.5E+03 nc		
	5.0E-02 i			0	0.10	557-21-1	Zinc cyanide	2.7E+03 nc	5.3E+04 nc		1.8E+03 nc		
	5.0E+00 i		5.0E+00 r	0	0.10	108-94-1	Cyclohexanone	1.0E+05 max	1.0E+05 max	1.8E+04 nc	1.8E+05 nc		
	2.0E-01 i		2.0E-01 r	0	0.10	108-91-8	Cyclohexylamine	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	68085-85-8	Cyhalothrin/Karate	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	52315-07-8	Cypermethrin	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	7.5E-03 i		7.5E-03 r	0	0.10	66215-27-8	Cyromazine	4.1E+02 nc	8.0E+03 nc	2.7E+01 nc	2.7E+02 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	1861-32-1	Dacthal	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	3.0E-02 i		3.0E-02 r	0	0.10	75-99-0	Dalapon	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	39515-41-8	Danitol	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
2.4E-01 i		2.4E-01 r		0	0.03	72-54-8	DDD	2.4E+00 ca	1.9E+01 ca	2.8E-02 ca	2.8E-01 ca	1.6E+01	8.0E-01
3.4E-01 i		3.4E-01 r		0	0.03	72-55-9	DDE	1.7E+00 ca	1.3E+01 ca	2.0E-02 ca	2.0E-01 ca	5.4E+01	3.0E+00
3.4E-01 i	5.0E-04 i	3.4E-01 i	5.0E-04 r	0	0.03	50-29-3	DDT	1.7E+00 ca*	1.3E+01 ca*	2.0E-02 ca*	2.0E-01 ca*	3.2E+01	2.0E+00
	1.0E-02 i		1.0E-02 r	0	0.10	1163-19-5	Decabromodiphenyl ether	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	4.0E-05 i		4.0E-05 r	0	0.10	8065-48-3	Demeton	2.2E+00 nc	4.3E+01 nc	1.5E-01 nc	1.5E+00 nc		
6.1E-02 h		6.1E-02 r		0	0.10	2303-16-4	Diallate	7.3E+00 ca	4.9E+01 ca	1.1E-01 ca	1.1E+00 ca		
	9.0E-04 h		9.0E-04 r	0	0.10	333-41-5	Diazinon	4.9E+01 nc	9.6E+02 nc	3.3E+00 nc	3.3E+01 nc		
	4.0E-03 x		4.0E-03 r	1	0.10	132-64-9	**Dibenzofuran**	2.1E+02 nc	3.2E+03 nc	1.5E+01 nc	2.4E+01 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	106-37-6	1,4-Dibromobenzene	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
8.4E-02 i	2.0E-02 i	8.4E-02 r	2.0E-02 r	0	0.10	124-48-1	Dibromochloromethane	5.3E+00 ca	3.6E+01 ca	8.0E-02 ca	1.0E+00 ca	4.0E-01	2.0E-02
1.4E+00 h	5.7E-05 r	2.4E-03 h	5.7E-05 i	0	0.10	96-12-8	1,2-Dibromo-3-chloropropane	3.2E-01 ca**	2.1E+00 ca*	2.1E-01 nc	4.8E-02 ca*		
							"CAL-Modified PRG" (PEA, 1994)	**6.0E-02**		**9.6E-04**	**4.7E-03**		
8.5E+01 i	5.7E-05 r	7.7E-01 i	5.7E-05 h	1	0.10	106-93-4	1,2-Dibromoethane	4.9E-03 ca	2.9E-02 ca*	8.7E-03 ca*	7.6E-04 ca		
	1.0E-01 i		1.0E-01 r	0	0.10	84-74-2	Dibutyl phthalate	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc	2.3E+03	2.7E+02
	3.0E-02 i		3.0E-02 r	0	0.10	1918-00-9	Dicamba	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	9.0E-02 i		5.7E-02 h	1	0.10	95-50-1	1,2-Dichlorobenzene	3.7E+02 sat	3.7E+02 sat	2.1E+02 nc	3.7E+02 nc	1.7E+01	9.0E-01
	3.0E-02 n		2.3E-03 n	1	0.10	541-73-1	**1,3-Dichlorobenzene**	4.1E+01 nc	1.4E+02 nc	8.4E+00 nc	1.7E+01 nc		
2.4E-02 h	2.0E-01 n	2.4E-02 r	2.3E-01 i	1	0.10	106-46-7	1,4-Dichlorobenzene	3.0E+00 ca	7.3E+00 ca	2.8E-01 ca	4.7E-01 ca	2.0E+00	1.0E-01
4.5E-01 i		4.5E-01 r		0	0.10	91-94-1	3,3-Dichlorobenzidine	9.9E-01 ca	6.7E+00 ca	1.5E-02 ca	1.5E-01 ca	7.0E-03	3.0E-04
9.3E+00 r		9.3E+00 h		1	0.10	764-41-0	1,4-Dichloro-2-butene	7.5E-03 ca	1.8E-02 ca	7.2E-04 ca	1.2E-03 ca		
	2.0E-01 i		5.7E-02 h	1	0.10	75-71-8	Dichlorodifluoromethane	9.4E+01 nc	3.1E+02 nc	2.1E+02 nc	3.9E+02 nc		
	1.0E-01 h		1.4E-01 h	1	0.10	75-34-3	1,1-Dichloroethane	5.7E+02 nc	2.0E+03 nc	5.2E+02 nc	8.1E+02 nc	2.3E+01	1.0E+00
9.1E-02 i	2.9E-03 r	9.1E-02 i	2.9E-03 x	1	0.10	107-06-2	**1,2-Dichloroethane (EDC)**	3.4E-01 ca*	7.6E-01 ca*	7.4E-02 ca	1.2E-01 ca	2.0E-02	1.0E-03
6.0E-01 i	9.0E-03 i	1.8E-01 i	9.0E-03 r	1	0.10	75-35-4	1,1-Dichloroethylene	5.2E-02 ca	1.2E-01 ca	3.8E-02 ca	4.6E-02 ca	6.0E-02	3.0E-03
	1.0E-02 h		1.0E-02 r	1	0.10	156-59-2	1,2-Dichloroethylene (cis)	4.2E+01 nc	1.5E+02 nc	3.7E+01 nc	6.1E+01 nc	4.0E-01	2.0E-02

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

SOIL SCREENING LEVELS

TOXICITY INFORMATION

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
	2.0E-02 i		2.0E-02 r	1	0.10	156-60-5	1,2-Dichloroethylene (trans)	6.2E+01 nc	2.1E+02 nc	7.3E+01 nc	1.2E+02 nc	7.0E-01	3.0E-02
	3.0E-03 i		3.0E-03 r	0	0.10	120-83-2	2,4-Dichlorophenol	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc	1.0E+00	5.0E-02
	8.0E-03 i		8.0E-03 r	0	0.10	94-82-6	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	4.4E+02 nc	8.6E+03 nc	2.9E+01 nc	2.9E+02 nc		
	1.0E-02 i		1.0E-02 r	0	0.05	94-75-7	2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.4E+02 nc	1.4E+04 nc	3.7E+01 nc	3.7E+02 nc		
6.8E-02 h	1.1E-03 r	6.8E-02 r	1.1E-03 i	1	0.10	78-87-5	1,2-Dichloropropane	3.4E-01 ca*	7.6E-01 ca*	9.9E-02 ca*	1.6E-01 ca*	3.0E-02	1.0E-03
1.8E-01 h	3.0E-04 i	1.3E-01 h	5.7E-03 i	1	0.10	542-75-6	1,3-Dichloropropene	8.1E-02 ca*	1.8E-01 ca	5.2E-02 ca	8.1E-02 ca	4.0E-03	2.0E-04
	3.0E-03 i		3.0E-03 r	0	0.10	616-23-9	2,3-Dichloropropanol	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
2.9E-01 i	5.0E-04 i	2.9E-01 r	1.4E-04 i	0	0.10	62-73-7	Dichlorvos	1.5E+00 ca*	1.0E+01 ca*	2.3E-02 ca*	2.3E-01 ca*		
4.4E-01 x		4.4E-01 r		0	0.10	115-32-2	Dicofol	1.0E+00 ca	6.8E+00 ca	1.5E-02 ca	1.5E-01 ca		
	3.0E-02 h		5.7E-05 h	1	0.10	77-73-6	Dicyclopentadiene	5.4E-01 nc	1.8E+00 nc	2.1E-01 nc	4.2E-01 nc		
1.6E+01 i	5.0E-05 i	1.6E+01 i	5.0E-05 r	0	0.10	60-57-1	Dieldrin	2.8E-02 ca*	1.9E-01 ca	4.2E-04 ca	4.2E-03 ca	4.0E-03	2.0E-04
	5.7E-03 h		5.7E-03 x	0	0.10	112-34-5	Diethylene glycol, monobutyl ether	3.1E+02 nc	6.1E+03 nc	2.1E+01 nc	2.1E+02 nc		
	2.0E+00 h		2.0E+00 r	0	0.10	111-90-0	Diethylene glycol, monoethyl ether	1.0E+05 max	1.0E+05 max	7.3E+03 nc	7.3E+04 nc		
	1.1E-02 h		1.1E-02 r	0	0.10	617-84-5	Diethylformamide	6.0E+02 nc	1.2E+04 nc	4.0E+01 nc	4.0E+02 nc		
1.2E-03 i	6.0E-01 i	1.2E-03 r	6.0E-01 r	0	0.10	103-23-1	Di(2-ethylhexyl)adipate	3.7E+02 ca	2.5E+03 ca	5.6E+00 ca	5.6E+01 ca		
	8.0E-01 i		8.0E-01 r	0	0.10	84-66-2	Diethyl phthalate	4.4E+04 nc	1.0E+05 max	2.9E+03 nc	2.9E+04 nc		
4.7E+03 h		4.7E+03 r		0	0.10	56-53-1	Diethylstilbestrol	9.4E-05 ca	6.4E-04 ca	1.4E-06 ca	1.4E-05 ca		
	8.0E-02 i		8.0E-02 r	0	0.10	43222-48-6	Difenzoquat (Avenge)	4.4E+03 nc	8.6E+04 nc	2.9E+02 nc	2.9E+03 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	35367-38-5	Diflubenzuron	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.1E+01 r		1.1E+01 i	1	0.10	75-37-6	1,1-Difluoroethane			4.2E+04 nc	6.9E+04 nc		
	8.0E-02 i		8.0E-02 r	0	0.10	1445-75-6	Diisopropyl methylphosphonate	4.4E+03 nc	8.6E+04 nc	2.9E+02 nc	2.9E+03 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	55290-64-7	Dimethipin	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	2.0E-04 i		2.0E-04 r	0	0.10	60-51-5	Dimethoate	1.1E+01 nc	2.1E+02 nc	7.3E-01 nc	7.3E+00 nc		
1.4E-02 h		1.4E-02 r		0	0.10	119-90-4	3,3'-Dimethoxybenzidine	3.2E+01 ca	2.1E+02 ca	4.8E-01 ca	4.8E+00 ca		
	5.7E-06 r		5.7E-06 x	1	0.10	124-40-3	Dimethylamine	6.3E-02 nc	2.5E-01 nc	2.1E-02 nc	3.5E-02 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	121-69-7	N-N-Dimethylaniline	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
7.5E-01 h		7.5E-01 r		0	0.10	95-68-1	2,4-Dimethylaniline	5.9E-01 ca	4.0E+00 ca	9.0E-03 ca	9.0E-02 ca		
5.8E-01 h		5.8E-01 r		0	0.10	21436-96-4	2,4-Dimethylaniline hydrochloride	7.7E-01 ca	5.2E+00 ca	1.2E-02 ca	1.2E-01 ca		
9.2E+00 h		9.2E+00 r		0	0.10	119-93-7	3,3'-Dimethylbenzidine	4.8E-02 ca	3.3E-01 ca	7.3E-04 ca	7.3E-03 ca		
2.6E+00 x		3.5E+00 x		0	0.10	57-14-7	1,1-Dimethylhydrazine	1.7E-01 ca	1.2E+00 ca	1.9E-03 ca	2.6E-02 ca		
3.7E+01 x		3.7E+01 x		0	0.10	540-73-8	1,2-Dimethylhydrazine	1.2E-02 ca	8.1E-02 ca	1.8E-04 ca	1.8E-03 ca		
	1.0E-01 h		8.6E-03 i	0	0.10	68-12-2	N,N-Dimethylformamide	5.4E+03 nc	1.1E+05 nc	3.1E+01 nc	3.7E+03 nc		
	1.0E-03 n		1.0E-03 r	0	0.10	122-09-8	Dimethylphenethylamine	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	105-67-9	2,4-Dimethylphenol	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc	9.0E+00	4.0E-01
	6.0E-04 i		6.0E-04 r	0	0.10	576-26-1	2,6-Dimethylphenol	3.3E+01 nc	6.4E+02 nc	2.2E+00 nc	2.2E+01 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	95-65-8	3,4-Dimethylphenol	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	1.0E+01 h		1.0E+01 r	0	0.10	131-11-3	Dimethyl phthalate	1.0E+05 max	1.0E+05 max	3.7E+04 nc	3.7E+05 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	120-61-6	Dimethyl terephthalate	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	131-89-5	4,6-Dinitro-o-cyclohexyl phenol	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	4.0E-04 h		4.0E-04 r	0	0.10	528-29-0	1,2-Dinitrobenzene	2.2E+01 nc	4.3E+02 nc	1.5E+00 nc	1.5E+01 nc		
	1.0E-04 i		1.0E-04 r	0	0.10	99-65-0	1,3-Dinitrobenzene	5.5E+00 nc	1.1E+02 nc	3.7E-01 nc	3.7E+00 nc		
	4.0E-04 h		4.0E-04 r	0	0.10	100-25-4	1,4-Dinitrobenzene	2.2E+01 nc	4.3E+02 nc	1.5E+00 nc	1.5E+01 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	51-28-5	2,4-Dinitrophenol	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc	3.0E-01	1.0E-02
6.8E-01 i		6.8E-01 r		0	0.10	25321-14-6	Dinitrotoluene mixture	6.5E-01 ca	4.4E+00 ca	9.9E-03 ca	9.9E-02 ca	8.0E-04	4.0E-05
	2.0E-03 i		2.0E-03 r	0	0.10	121-14-2	2,4-Dinitrotoluene (also see Dinitrotoluene mixture)	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc	8.0E-04	4.0E-05
	1.0E-03 h		1.0E-03 r	0	0.10	606-20-2	2,6-Dinitrotoluene (also see Dinitrotoluene mixture)	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc	7.0E-04	3.0E-05
	1.0E-03 i		1.0E-03 r	0	0.10	88-85-7	Dinoseb	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	2.0E-02 h		2.0E-02 r	0	0.10	117-84-0	di-n-Octyl phthalate	1.1E+03 nc	1.0E+04 sat	7.3E+01 nc	7.3E+02 nc	1.0E+04	1.0E+04

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SOIL SCREENING LEVELS

TOXICITY INFORMATION

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	DAF 1 (mg/kg)
1.1E-02 i		1.1E-02 r		0	0.10	123-91-1	1,4-Dioxane	4.0E+01 ca	2.7E+02 ca	6.1E-01 ca	6.1E+00 ca		
1.5E+05 h		1.5E+05 h		0	0.03	1746-01-6	Dioxin (2,3,7,8-TCDD)	3.8E-06 ca	3.0E-05 ca	4.5E-08 ca	4.5E-07 ca		
	3.0E-02 i		3.0E-02 r	0	0.10	957-51-7	Diphenamid	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	122-39-4	Diphenylamine	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
8.0E-01 i		7.7E-01 i		0	0.10	122-66-7	1,2-Diphenylhydrazine	5.6E-01 ca	3.7E+00 ca	8.7E-03 ca	8.4E-02 ca		
	9.0E-03 n		9.0E-03 r	0	0.10	127-63-9	Diphenyl sulfone	4.9E+02 nc	9.6E+03 nc	3.3E+01 nc	3.3E+02 nc		
	2.2E-03 i		2.2E-03 r	0	0.10	85-00-7	Diquat	1.2E+02 nc	2.4E+03 nc	8.0E+00 nc	8.0E+01 nc		
8.6E+00 h		8.6E+00 r		0	0.10	1937-37-7	Direct black 38	5.2E-02 ca	3.5E-01 ca	7.8E-04 ca	7.8E-03 ca		
8.1E+00 h		8.1E+00 r		0	0.10	2602-46-2	Direct blue 6	5.5E-02 ca	3.7E-01 ca	8.3E-04 ca	8.3E-03 ca		
9.3E+00 h		9.3E+00 r		0	0.10	16071-86-6	Direct brown 95	4.8E-02 ca	3.2E-01 ca	7.2E-04 ca	7.2E-03 ca		
	4.0E-05 i		4.0E-05 r	0	0.10	298-04-4	Disulfoton	2.2E+00 nc	4.3E+01 nc	1.5E-01 nc	1.5E+00 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	505-29-3	1,4-Dithiane	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	330-54-1	Diuron	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	4.0E-03 i		4.0E-03 r	0	0.10	2439-10-3	Dodine	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc		
	6.0E-03 i		6.0E-03 r	0	0.10	115-29-7	Endosulfan	3.3E+02 nc	6.4E+03 nc	2.2E+01 nc	2.2E+02 nc	1.8E+01	9.0E-01
	2.0E-02 i		2.0E-02 r	0	0.10	145-73-3	Endothall	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	3.0E-04 i		3.0E-04 r	0	0.10	72-20-8	Endrin	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc	1.0E+00	5.0E-02
9.9E-03 i	2.0E-03 h	4.2E-03 i	2.9E-04 i	1	0.10	106-89-8	Epichlorohydrin	7.4E+00 nc	2.6E+01 nc	1.0E+00 nc	2.0E+00 nc		
	5.7E-03 r		5.7E-03 i	0	0.10	106-88-7	1,2-Epoxybutane	3.1E+02 nc	6.1E+03 nc	2.1E+01 nc	2.1E+02 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	759-94-4	EPTC (S-Ethyl dipropylthiocarbamate)	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	16672-87-0	Ethephon (2-chloroethyl phosphonic acid)	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	5.0E-04 i		5.0E-04 r	0	0.10	563-12-2	Ethion	2.7E+01 nc	5.3E+02 nc	1.8E+00 nc	1.8E+01 nc		
	4.0E-01 h		5.7E-02 i	0	0.10	110-80-5	2-Ethoxyethanol	2.2E+04 nc	1.0E+05 max	2.1E+02 nc	1.5E+04 nc		
	3.0E-01 h		3.0E-01 r	0	0.10	111-15-9	2-Ethoxyethanol acetate	1.6E+04 nc	1.0E+05 max	1.1E+03 nc	1.1E+04 nc		
	9.0E-01 i		9.0E-01 r	1	0.10	141-78-6	Ethyl acetate	1.7E+04 nc	7.7E+04 sat	3.3E+03 nc	5.5E+03 nc		
4.8E-02 h		4.8E-02 r		1	0.10	SU 140-88-5	Ethyl acrylate	2.1E-01 ca	4.5E-01 ca	1.4E-01 ca	2.3E-01 ca		
	1.0E-01 i		2.9E-01 i	1	0.10	100-41-4	Ethylbenzene	2.3E+02 sat	2.3E+02 sat	1.1E+03 nc	1.3E+03 nc	1.3E+01	7.0E-01
	4.0E-01 n		2.9E+00 i	1	0.10	75-00-3	Ethyl chloride	1.6E+03 sat	1.6E+03 sat	1.0E+04 nc	8.6E+03 nc		
	3.0E-01 h		3.0E-01 r	0	0.10	109-78-4	Ethylene cyanohydrin	1.6E+04 nc	1.0E+05 max	1.1E+03 nc	1.1E+04 nc		
	2.0E-02 h		2.0E-02 r	0	0.10	107-15-3	Ethylene diamine	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	2.0E+00 i		2.0E+00 r	0	0.10	107-21-1	Ethylene glycol	1.0E+05 max	1.0E+05 max	7.3E+03 nc	7.3E+04 nc		
	5.7E-03 r		5.7E-03 h	0	0.10	111-76-2	Ethylene glycol, monobutyl ether	3.1E+02 nc	6.1E+03 nc	2.1E+01 nc	2.1E+02 nc		
1.0E+00 h		3.5E-01 h		1	0.10	75-21-8	Ethylene oxide	1.3E-01 ca	3.4E-01 ca	1.9E-02 ca	2.4E-02 ca		
1.1E-01 h	8.0E-05 i	1.1E-01 r	8.0E-05 r	0	0.10	96-45-7	Ethylene thiourea (ETU)	4.0E+00 ca**	2.7E+01 ca**	6.1E-02 ca**	6.1E-01 ca**		
	2.0E-01 i		2.0E-01 r	1	0.10	SU 60-29-7	Ethyl ether	1.8E+03 sat	1.8E+03 sat	7.3E+02 nc	1.2E+03 nc		
	9.0E-02 h		9.0E-02 r	1	0.10	SU 97-63-2	Ethyl methacrylate	1.4E+02 sat	1.4E+02 sat	3.3E+02 nc	5.5E+02 nc		
	1.0E-05 i		1.0E-05 r	0	0.10	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	5.5E-01 nc	1.1E+01 nc	3.7E-02 nc	3.7E-01 nc		
	3.0E+00 i		3.0E+00 r	0	0.10	84-72-0	Ethylphthalyl ethyl glycolate	1.0E+05 max	1.0E+05 max	1.1E+04 nc	1.1E+05 nc		
	8.0E-03 i		8.0E-03 r	0	0.10	101200-48-0	Express	4.4E+02 nc	8.6E+03 nc	2.9E+01 nc	2.9E+02 nc		
	2.5E-04 i		2.5E-04 r	0	0.10	22224-92-6	Fenamiphos	1.4E+01 nc	2.7E+02 nc	9.1E-01 nc	9.1E+00 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	2164-17-2	Fluometuron	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	6.0E-02 i			0	0.10	16984-48-8	Flouride (soluble)	3.3E+03 nc	6.4E+04 nc		2.2E+03 nc		
	8.0E-02 i		8.0E-02 r	0	0.10	59756-60-4	Fluoridone	4.4E+03 nc	8.6E+04 nc	2.9E+02 nc	2.9E+03 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	56425-91-3	Flurprimidol	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	6.0E-02 i		6.0E-02 r	0	0.10	66332-96-5	Flutolanil	3.3E+03 nc	6.4E+04 nc	2.2E+02 nc	2.2E+03 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	69409-94-5	Fluvalinate	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
3.5E-03 i	1.0E-01 i	3.5E-03 r	1.0E-01 r	0	0.10	133-07-3	Folpet	1.3E+02 ca*	8.6E+02 ca	1.9E+00 ca	1.9E+01 ca		
1.9E-01 i		1.9E-01 r		0	0.10	72178-02-0	Fomesafen	2.3E+00 ca	1.6E+01 ca	3.5E-02 ca	3.5E-01 ca		

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

SOIL SCREENING LEVELS

TOXICITY INFORMATION							CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs)					
				V	skin							Migration to Ground Water	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	O C	abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	DAF 20 (mg/kg)	DAF 1 (mg/kg)
	2.0E-03 i		2.0E-03 r	0	0.10	944-22-9	Fonofos	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	1.5E-01 i	4.6E-02 i		0	0.10	50-00-0	Formaldehyde	8.2E+03 nc	1.0E+05 nc	1.5E-01 ca	5.5E+03 nc		
	2.0E+00 h		2.0E+00 r	0	0.10	64-18-6	Formic Acid	1.0E+05 max	1.0E+05 max	7.3E+03 nc	7.3E+04 nc		
	3.0E+00 i		3.0E+00 r	0	0.10	39148-24-8	Fosetyl-al	1.0E+05 max	1.0E+05 max	1.1E+04 nc	1.1E+05 nc		
	1.0E-03 i		1.0E-03 r	1	0.10	110-00-9	Furan	2.5E+00 nc	8.5E+00 nc	3.7E+00 nc	6.1E+00 nc		
3.8E+00 h		3.8E+00 r		0	0.10	67-45-8	Furazolidone	1.2E-01 ca	7.9E-01 ca	1.8E-03 ca	1.8E-02 ca		
	3.0E-03 i		1.4E-02 h	0	0.10	98-01-1	Furfural	1.6E+02 nc	3.2E+03 nc	5.2E+01 nc	1.1E+02 nc		
5.0E+01 h		5.0E+01 r		0	0.10	531-82-8	Furium	8.9E-03 ca	6.0E-02 ca	1.3E-04 ca	1.3E-03 ca		
3.0E-02 i		3.0E-02 r		0	0.10	60568-05-0	Furmecyclox	1.5E+01 ca	1.0E+02 ca	2.2E-01 ca	2.2E+00 ca		
	4.0E-04 i		4.0E-04 r	0	0.10	77182-82-2	Glufosinate-ammonium	2.2E+01 nc	4.3E+02 nc	1.5E+00 nc	1.5E+01 nc		
	4.0E-04 i		2.9E-04 h	0	0.10	765-34-4	Glycidaldehyde	2.2E+01 nc	4.3E+02 nc	1.0E+00 nc	1.5E+01 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	1071-83-6	Glyphosate	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	5.0E-05 i		5.0E-05 r	0	0.10	69806-40-2	Haloxyfop-methyl	2.7E+00 nc	5.3E+01 nc	1.8E-01 nc	1.8E+00 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	79277-27-3	Harmony	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
4.5E+00 i	5.0E-04 i	4.6E+00 i	5.0E-04 r	0	0.10	76-44-8	Heptachlor	9.9E-02 ca	6.7E-01 ca	1.5E-03 ca	1.5E-02 ca	2.3E+01	1.0E+00
9.1E+00 i	1.3E-05 i	9.1E+00 i	1.3E-05 r	0	0.10	1024-57-3	Heptachlor epoxide	4.9E-02 ca*	3.3E-01 ca*	7.4E-04 ca*	7.4E-03 ca*	7.0E-01	3.0E-02
	2.0E-03 i		2.0E-03 r	0	0.10	87-82-1	Hexabromobenzene	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
1.6E+00 i	8.0E-04 i	1.6E+00 i	8.0E-04 r	0	0.10	118-74-1	Hexachlorobenzene	2.8E-01 ca	1.9E+00 ca	4.2E-03 ca	4.2E-02 ca	2.0E+00	1.0E-01
7.8E-02 i	2.0E-04 h	7.7E-02 i	2.0E-04 r	0	0.10	87-68-3	Hexachlorobutadiene	5.7E+00 ca**	3.8E+01 ca**	8.7E-02 ca*	8.6E-01 ca*	2.0E+00	1.0E-01
6.3E+00 i		6.3E+00 i		0	0.04	319-84-6	HCH (alpha)	8.6E-02 ca	6.7E-01 ca	1.1E-03 ca	1.1E-02 ca	5.0E-04	3.0E-05
1.8E+00 i		1.8E+00 i		0	0.04	319-85-7	HCH (beta)	3.0E-01 ca	2.3E+00 ca	3.7E-03 ca	3.7E-02 ca	3.0E-03	1.0E-04
1.3E+00 h	3.0E-04 i	1.3E+00 r	3.0E-04 r	0	0.04	58-89-9	HCH (gamma) Lindane	4.2E-01 ca*	3.2E+00 ca	5.2E-03 ca	5.2E-02 ca	9.0E-03	5.0E-04
1.8E+00 i		1.8E+00 i		0	0.04	608-73-1	HCH-technical	3.0E-01 ca	2.3E+00 ca	3.8E-03 ca	3.7E-02 ca	3.0E-03	1.0E-04
	7.0E-03 i		2.0E-05 h	0	0.10	77-47-4	Hexachlorocyclopentadiene	3.8E+02 nc	7.1E+03 nc	7.3E-02 nc	2.6E+02 nc	4.0E+02	2.0E+01
6.2E+03 i		4.6E+03 i		0	0.10	19408-74-3	Hexachlorodibenzo-p-dioxin mixture (HxCDD)	7.2E-05 ca	4.8E-04 ca	1.5E-06 ca	1.1E-05 ca		
1.4E-02 i	1.0E-03 i	1.4E-02 i	1.0E-03 r	0	0.10	67-72-1	Hexachloroethane	3.2E+01 ca**	2.1E+02 ca**	4.8E-01 ca**	4.8E+00 ca**	5.0E-01	2.0E-02
	3.0E-04 i		3.0E-04 r	0	0.10	70-30-4	Hexachlorophene	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
1.1E-01 i	3.0E-03 i	1.1E-01 r	3.0E-03 r	0	0.10	121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine	4.0E+00 ca*	2.7E+01 ca	6.1E-02 ca	6.1E-01 ca		
	2.9E-06 r		2.9E-06 i	0	0.10	822-06-0	1,6-Hexamethylene diisocyanate			1.0E-02 nc	1.0E-01 nc		
	6.0E-02 h		5.7E-02 i	1	0.10	110-54-3	n-Hexane	1.1E+02 sat	1.1E+02 sat	2.1E+02 nc	3.5E+02 nc		
	3.3E-02 i		3.3E-02 r	0	0.10	51235-04-2	Hexazinone	1.8E+03 nc	3.5E+04 nc	1.2E+02 nc	1.2E+03 nc		
3.0E+00 i		1.7E+01 i		0	0.10	302-01-2	Hydrazine, hydrazine sulfate	1.5E-01 ca	1.0E+00 ca	3.9E-04 ca	2.2E-02 ca		
			5.7E-03 i	0	0.10	7647-01-0	Hydrogen chloride			2.1E+01 nc			
	3.0E-03 i		2.9E-04 i	1	0.10	7783-06-4	Hydrogen sulfide			1.0E+00 nc	2.0E+00 nc		
	4.0E-02 h		4.0E-02 r	0	0.10	123-31-9	p-Hydroquinone	2.2E+03 nc	4.3E+04 nc	1.5E+02 nc	1.5E+03 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	35554-44-0	Imazalil	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	2.5E-01 i		2.5E-01 r	0	0.10	81335-37-7	Imazaquin	1.4E+04 nc	1.0E+05 max	9.1E+02 nc	9.1E+03 nc		
	4.0E-02 i		4.0E-02 r	0	0.10	36734-19-7	Iprodione	2.2E+03 nc	4.3E+04 nc	1.5E+02 nc	1.5E+03 nc		
	3.0E-01 n			0	0.01	7439-89-6	Iron	2.2E+04 nc	1.0E+05 max		1.1E+04 nc		
	3.0E-01 i		3.0E-01 r	1	0.10	78-83-1	Isobutanol	1.0E+04 nc	4.0E+04 sat	1.1E+03 nc	1.8E+03 nc		
9.5E-04 i	2.0E-01 i	9.5E-04 r	2.0E-01 r	0	0.10	78-59-1	Isophorone	4.7E+02 ca*	3.2E+03 ca*	7.1E+00 ca	7.1E+01 ca	5.0E-01	3.0E-02
	1.5E-02 i		1.5E-02 r	0	0.10	33820-53-0	Isopropalin	8.2E+02 nc	1.6E+04 nc	5.5E+01 nc	5.5E+02 nc		
	1.0E-01 i		1.1E-01 r	0	0.10	1832-54-8	Isopropyl methyl phosphonic acid	5.5E+03 nc	1.1E+05 nc	4.0E+02 nc	3.7E+03 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	82558-50-7	Isoxaben	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
1.8E+01 n		1.8E+01 r		0	0.10	143-50-0	Kepone	2.5E-02 ca	1.7E-01 ca	3.7E-04 ca	3.7E-03 ca		
	2.0E-03 i		2.0E-03 r	0	0.10	77501-63-4	Lactofen	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
PRGs Based on EPA Models, IEUBK (1994) and TRW (1996)						7439-92-1	Lead	4.0E+02 nc	1.0E+03 nc		4.0E+00 nc		
							"CAL-Modified PRG" (PEA, 1994)	1.3E+02					

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

TOXICITY INFORMATION							CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS					
				V	skin							Migration to Ground Water	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	O C	abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	DAF 20 (mg/kg)	DAF 1 (mg/kg)
	1.0E-07 i			0	0.10	78-00-2	Lead (tetraethyl)	5.5E-03 nc	1.1E-01 nc		3.7E-03 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	330-55-2	Linuron	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	2.0E-02 x			0	0.01	7439-93-2	Lithium	1.5E+03 nc	3.7E+04 nc		7.3E+02 nc		
	2.0E-01 i		2.0E-01 r	0	0.10	83055-99-6	Londax	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	121-75-5	Malathion	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	108-31-6	Maleic anhydride	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	5.0E-01 i		5.0E-01 r	1	0.10	123-33-1	Maleic hydrazide	1.6E+03 nc	5.6E+03 nc	1.8E+03 nc	3.0E+03 nc		
	2.0E-05 h		2.0E-05 r	0	0.10	109-77-3	Malononitrile	1.1E+00 nc	2.1E+01 nc	7.3E-02 nc	7.3E-01 nc		
	3.0E-02 h		3.0E-02 r	0	0.10	8018-01-7	Mancozeb	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
6.0E-02 o	5.0E-03 i	6.0E-02 r	5.0E-03 r	0	0.10	12427-38-2	Maneb	7.4E+00 ca*	5.0E+01 ca	1.1E-01 ca	1.1E+00 ca		
	4.7E-02 i		1.4E-05 i	0	0.01	7439-96-5	Manganese and compounds	3.1E+03 nc	4.5E+04 nc	5.1E-02 nc	1.7E+03 nc		
	9.0E-05 h		9.0E-05 r	0	0.10	950-10-7	Mephosfolan	4.9E+00 nc	9.6E+01 nc	3.3E-01 nc	3.3E+00 nc		
	3.0E-02 i		3.0E-02 r	0	0.10	24307-26-4	Mepiquat	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
2.9E-02 n	1.0E-01 n	2.9E-02 r	1.0E-01 r	0	0.10	149-30-4	2-Mercaptobenzothiazole	1.5E+01 ca	1.0E+02 ca	2.3E-01 ca	2.3E+00 ca		
	3.0E-04 i			0	0.01	7487-94-7	Mercury and compounds	2.2E+01 nc	5.6E+02 nc		1.1E+01 nc		
			8.6E-05 i	n/a	n/a	7439-97-6	Mercury (elemental)			3.1E-01 nc			
	1.0E-04 i			0	0.10	22967-92-6	Mercury (methyl)	5.5E+00 nc	1.1E+02 nc		3.7E+00 nc		
	3.0E-05 i		3.0E-05 r	0	0.10	150-50-5	Merphos	1.6E+00 nc	3.2E+01 nc	1.1E-01 nc	1.1E+00 nc		
	3.0E-05 i		3.0E-05 r	0	0.10	78-48-8	Merphos oxide	1.6E+00 nc	3.2E+01 nc	1.1E-01 nc	1.1E+00 nc		
	6.0E-02 i		6.0E-02 r	0	0.10	57837-19-1	Metalaxyl	3.3E+03 nc	6.4E+04 nc	2.2E+02 nc	2.2E+03 nc		
	1.0E-04 i		2.0E-04 h	1	0.10	SU 126-98-7	Methacrylonitrile	1.8E+00 nc	8.4E+00 nc	7.3E-01 nc	1.0E+00 nc		
	5.0E-05 i		5.0E-05 r	0	0.10	10265-92-6	Methamidophos	2.7E+00 nc	5.3E+01 nc	1.8E-01 nc	1.8E+00 nc		
	5.0E-01 i		5.0E-01 r	0	0.10	67-56-1	Methanol	2.7E+04 nc	1.0E+05 max	1.8E+03 nc	1.8E+04 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	950-37-8	Methidathion	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	2.5E-02 i		2.5E-02 r	1	0.10	16752-77-5	Methomyl	4.4E+01 nc	1.5E+02 nc	9.1E+01 nc	1.5E+02 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	72-43-5	Methoxychlor	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc	1.6E+02	8.0E+00
	1.0E-03 h		5.7E-03 i	0	0.10	109-86-4	2-Methoxyethanol	5.5E+01 nc	1.1E+03 nc	2.1E+01 nc	3.7E+01 nc		
	2.0E-03 h		2.0E-03 r	0	0.10	110-49-6	2-Methoxyethanol acetate	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
4.6E-02 h		4.6E-02 r		0	0.10	99-59-2	2-Methoxy-5-nitroaniline	9.7E+00 ca	6.5E+01 ca	1.5E-01 ca	1.5E+00 ca		
	1.0E+00 h		1.0E+00 r	1	0.10	SU 79-20-9	Methyl acetate	2.0E+04 nc	9.2E+04 nc	3.7E+03 nc	6.1E+03 nc		
	3.0E-02 h		3.0E-02 r	1	0.10	SU 96-33-3	Methyl acrylate	6.9E+01 nc	2.3E+02 nc	1.1E+02 nc	1.8E+02 nc		
2.4E-01 h		2.4E-01 r		0	0.10	95-53-4	2-Methylaniline (o-toluidine)	1.9E+00 ca	1.2E+01 ca	2.8E-02 ca	2.8E-01 ca		
1.8E-01 h		1.8E-01 r		0	0.10	636-21-5	2-Methylaniline hydrochloride	2.5E+00 ca	1.7E+01 ca	3.7E-02 ca	3.7E-01 ca		
	1.0E+00 x		1.0E+00 r	0	0.10	79-22-1	Methyl chlorocarbonate	5.5E+04 nc	1.0E+05 max	3.7E+03 nc	3.7E+04 nc		
	5.0E-04 i		5.0E-04 r	0	0.10	94-74-6	2-Methyl-4-chlorophenoxyacetic acid	2.7E+01 nc	5.3E+02 nc	1.8E+00 nc	1.8E+01 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	94-81-5	4-(2-Methyl-4-chlorophenoxy) butyric acid	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	93-65-2	2-(2-Methyl-4-chlorophenoxy) propionic acid	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	16484-77-8	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	8.6E-01 r		8.6E-01 h	0	0.10	108-87-2	Methylcyclohexane	4.7E+04 nc	1.0E+05 max	3.1E+03 nc	3.1E+04 nc		
2.5E-01 h		2.5E-01 r		0	0.10	101-77-9	4,4'-Methylenebisbenzeneamine	1.8E+00 ca	1.2E+01 ca	2.7E-02 ca	2.7E-01 ca		
1.3E-01 h	7.0E-04 h	1.3E-01 h	7.0E-04 r	0	0.10	101-14-4	4,4'-Methylene bis(2-chloroaniline)	3.4E+00 ca*	2.3E+01 ca*	5.2E-02 ca*	5.2E-01 ca*		
4.6E-02 i		4.6E-02 r		0	0.10	101-61-1	4,4'-Methylene bis(N,N'-dimethyl)aniline	9.7E+00 ca	6.5E+01 ca	1.5E-01 ca	1.5E+00 ca		
	1.0E-02 h		1.0E-02 r	0	0.10	74-95-3	Methylene bromide	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
7.5E-03 i	6.0E-02 i	1.6E-03 i	8.6E-01 h	1	0.10	75-09-2	Methylene chloride	8.5E+00 ca	2.0E+01 ca	4.1E+00 ca	4.3E+00 ca	2.0E-02	1.0E-03
	1.7E-04 r		1.7E-04 i	0	0.10	101-68-8	4,4'-Methylene diphenyl diisocyanate	9.3E+00 nc	1.8E+02 nc	6.2E-01 nc	6.2E+00 nc		
	6.0E-01 i		2.9E-01 i	1	0.10	78-93-3	Methyl ethyl ketone	6.9E+03 nc	2.7E+04 nc	1.0E+03 nc	1.9E+03 nc		
1.1E+00 h		1.1E+00 r		0	0.10	60-34-4	Methyl hydrazine	4.0E-01 ca	2.7E+00 ca	6.1E-03 ca	6.1E-02 ca		
	8.0E-02 h		2.3E-02 h	1	0.10	108-10-1	Methyl isobutyl ketone	7.5E+02 nc	2.8E+03 nc	8.3E+01 nc	1.6E+02 nc		

Key : i=IRIS h=HEAST n=NCEA x=WITHDRAWN o=Other EPA DOCUMENTS r=ROUTE EXTRAPOLATION ca=CANCER PRG nc=NONCANCER PRG sat=SOIL SATURATION max=CEILING LIMIT *(where: nc < 100X ca) **(where: nc < 10X ca)

SOIL SCREENING LEVELS

TOXICITY INFORMATION							CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs)					
				V	skin							Migration to Ground Water	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	O C	abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	DAF 20 (mg/kg)	DAF 1 (mg/kg)
	5.7E-04 r		5.7E-04 n	0	0.10	74-93-1	Methyl Mercaptan	3.1E+01 nc	6.1E+02 nc	2.1E+00 nc	2.1E+01 nc		
	1.4E+00 i		2.0E-01 i	1	0.10	80-62-6	Methyl methacrylate	2.2E+03 nc	7.3E+03 nc	7.3E+02 nc	1.4E+03 nc		
3.3E-02 h		3.3E-02 r		0	0.10	99-55-8	2-Methyl-5-nitroaniline	1.3E+01 ca	9.1E+01 ca	2.0E-01 ca	2.0E+00 ca		
	2.5E-04 i		2.5E-04 r	0	0.10	298-00-0	Methyl parathion	1.4E+01 nc	2.7E+02 nc	9.1E-01 nc	9.1E+00 nc		
	5.0E-02 x		5.0E-02 r	0	0.10	95-48-7	2-Methylphenol	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc	1.5E+01	8.0E-01
	5.0E-02 x		5.0E-02 r	0	0.10	108-39-4	3-Methylphenol	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	5.0E-03 h		5.0E-03 r	0	0.10	106-44-5	4-Methylphenol	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	2.0E-02 n		2.0E-02 r	0	0.10	993-13-5	Methyl phosphonic acid	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	6.0E-03 h		1.1E-02 h	1	0.10	SU 25013-15-4	Methyl styrene (mixture)	1.2E+02 nc	5.4E+02 nc	4.2E+01 nc	6.0E+01 nc		
	7.0E-02 h		7.0E-02 r	1	0.10	SU 98-83-9	Methyl styrene (alpha)	6.8E+02 sat	6.8E+02 sat	2.6E+02 nc	4.3E+02 nc		
			8.6E-01 i	1	0.10	1634-04-4	Methyl tertbutyl ether (MTBE)	n/a	n/a	3.1E+03 nc	2.0E+01 nc/ca		
	1.5E-01 i		1.5E-01 r	0	0.10	51218-45-2	Metolaclor (Dual)	8.2E+03 nc	1.0E+05 max	5.5E+02 nc	5.5E+03 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	21087-64-9	Metribuzin	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
1.8E+00 h	2.0E-04 i	1.8E+00 r	2.0E-04 r	0	0.10	2385-85-5	Mirex	2.5E-01 ca*	1.7E+00 ca	3.7E-03 ca	3.7E-02 ca		
	2.0E-03 i		2.0E-03 r	0	0.10	2212-67-1	Molinate	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	5.0E-03 h			0	0.01	7439-98-7	Molybdenum	3.7E+02 nc	9.4E+03 nc		1.8E+02 nc		
	1.0E-01 h		1.0E-01 h	0	0.10	10599-90-3	Monochloramine	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	300-76-5	Naled	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	15299-99-7	Napropamide	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	2.0E-02 i			0	0.01	7440-02-0	Nickel (soluble salts)	1.5E+03 nc	3.7E+04 nc		7.3E+02 nc	1.3E+02	7.0E+00
							"CAL-Modified PRG" (PEA, 1994)	1.5E+02					
		8.4E-01 i		0	0.01	n/a	Nickel refinery dust			8.0E-03 ca			
		1.7E+00 i		0	0.01	12035-72-2	Nickel subsulfide		1.1E+04 ca	4.0E-03 ca			
	1.5E-03 x		1.5E-03 r	0	0.10	1929-82-4	Nitrapyrin	8.2E+01 nc	1.6E+03 nc	5.5E+00 nc	5.5E+01 nc		
Tap Water PRG Based on Infant NOAEL (see IRIS)						14797-55-8	Nitrate				1.0E+04 nc		
	1.0E-01 x			0	0.10	10102-43-9	Nitric Oxide	5.5E+03 nc	1.1E+05 nc		3.7E+03 nc		
Tap Water PRG Based on Infant NOAEL (see IRIS)						14797-65-0	Nitrite				1.0E+03 nc		
	6.0E-05 r		5.7E-05 h	0	0.10	88-74-4	2-Nitroaniline	3.3E+00 nc	6.4E+01 nc	2.1E-01 nc	2.2E+00 nc		
				0	0.10	99-09-2	3-Nitroaniline						
				0	0.10	100-01-6	4-Nitroaniline						
	5.0E-04 i		5.7E-04 h	1	0.10	98-95-3	Nitrobenzene	1.6E+01 nc	1.0E+02 nc	2.1E+00 nc	3.4E+00 nc	1.0E-01	7.0E-03
	7.0E-02 h		7.0E-02 r	0	0.10	67-20-9	Nitrofurantoin	3.8E+03 nc	7.5E+04 nc	2.6E+02 nc	2.6E+03 nc		
1.5E+00 h		9.4E+00 h		0	0.10	59-87-0	Nitrofurazone	3.0E-01 ca	2.0E+00 ca	7.2E-04 ca	4.5E-02 ca		
	1.0E+00 x			0	0.10	101102-44-0	Nitrogen dioxide						
	1.0E-01 i		1.0E-01 r	0	0.10	556-88-7	Nitroguanidine	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc		
	6.2E-02 o		6.2E-02 r	0	0.10	100-02-7	4-Nitrophenol	3.4E+03 nc	6.6E+04 nc	2.3E+02 nc	2.3E+03 nc		
9.4E+00 r	5.7E-03 r	9.4E+00 h	5.7E-03 i	1	0.10	79-46-9	2-Nitropropane			7.2E-04 ca	3.5E+01 ca		
5.4E+00 i		5.6E+00 i		1	0.10	924-16-3	N-Nitrosodi-n-butylamine	2.2E-02 ca	5.8E-02 ca	1.2E-03 ca	2.0E-03 ca		
2.8E+00 i		2.8E+00 r		0	0.10	1116-54-7	N-Nitrosodiethanolamine	1.6E-01 ca	1.1E+00 ca	2.4E-03 ca	2.4E-02 ca		
1.5E+02 i		1.5E+02 i		0	0.10	55-18-5	N-Nitrosodiethylamine	3.0E-03 ca	2.0E-02 ca	4.5E-05 ca	4.5E-04 ca		
5.1E+01 i		4.9E+01 i		0	0.10	62-75-9	N-Nitrosodimethylamine	8.7E-03 ca	5.9E-02 ca	1.4E-04 ca	1.3E-03 ca		
4.9E-03 i		4.9E-03 r		0	0.10	86-30-6	N-Nitrosodiphenylamine	9.1E+01 ca	6.1E+02 ca	1.4E+00 ca	1.4E+01 ca	1.0E+00	6.0E-02
7.0E+00 i		7.0E+00 r		0	0.10	621-64-7	N-Nitroso di-n-propylamine	6.3E-02 ca	4.3E-01 ca	9.6E-04 ca	9.6E-03 ca	5.0E-05	2.0E-06
2.2E+01 i		2.2E+01 r		0	0.10	10595-95-6	N-Nitroso-N-methylethylamine	2.0E-02 ca	1.4E-01 ca	3.1E-04 ca	3.1E-03 ca		
2.1E+00 i		2.1E+00 i		0	0.10	930-55-2	N-Nitrosopyrrolidine	2.1E-01 ca	1.4E+00 ca	3.1E-03 ca	3.2E-02 ca		
	1.0E-02 h		1.0E-02 r	0	0.10	99-08-1	m-Nitrotoluene	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	1.0E-02 h		1.0E-02 r	0	0.10	99-08-1	o-Nitrotoluene	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	1.0E-02 h		1.0E-02 r	0	0.10	99-99-0	p-Nitrotoluene	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		

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TOXICITY INFORMATION — CONTAMINANT — PRELIMINARY REMEDIAL GOALS (PRGs) — SOIL SCREENING LEVELS

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
	4.0E-02 i		4.0E-02 r	0	0.10	27314-13-2	Norflurazon	2.2E+03 nc	4.3E+04 nc	1.5E+02 nc	1.5E+03 nc		
	7.0E-04 i		7.0E-04 r	0	0.10	85509-19-9	NuStar	3.8E+01 nc	7.5E+02 nc	2.6E+00 nc	2.6E+01 nc		
	3.0E-03 i		3.0E-03 r	0	0.10	32536-52-0	Octabromodiphenyl ether	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	2691-41-0	Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	2.0E-03 h		2.0E-03 r	0	0.10	152-16-9	Octamethylpyrophosphoramide	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	19044-88-3	Oryzalin	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	19666-30-9	Oxadiazon	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	23135-22-0	Oxamyl	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	3.0E-03 i		3.0E-03 r	0	0.10	42874-03-3	Oxyfluorfen	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	76738-62-0	Paclobutrazol	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	4.5E-03 i		4.5E-03 r	0	0.10	4685-14-7	Paraquat	2.5E+02 nc	4.8E+03 nc	1.6E+01 nc	1.6E+02 nc		
	6.0E-03 h		6.0E-03 r	0	0.10	56-38-2	Parathion	3.3E+02 nc	6.4E+03 nc	2.2E+01 nc	2.2E+02 nc		
	5.0E-02 h		5.0E-02 r	0	0.10	1114-71-2	Pebulate	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	4.0E-02 i		4.0E-02 r	0	0.10	40487-42-1	Pendimethalin	2.2E+03 nc	4.3E+04 nc	1.5E+02 nc	1.5E+03 nc		
2.3E-02 h		2.3E-02 r		0	0.10	87-84-3	Pentabromo-6-chloro cyclohexane	1.9E+01 ca	1.3E+02 ca	2.9E-01 ca	2.9E+00 ca		
	2.0E-03 i		2.0E-03 r	0	0.10	32534-81-9	Pentabromodiphenyl ether	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	8.0E-04 i		8.0E-04 r	0	0.10	608-93-5	Pentachlorobenzene	4.4E+01 nc	8.6E+02 nc	2.9E+00 nc	2.9E+01 nc		
2.6E-01 h	3.0E-03 i	2.6E-01 r	3.0E-03 r	0	0.10	82-68-8	Pentachloronitrobenzene	1.7E+00 ca*	1.2E+01 ca	2.6E-02 ca	2.6E-01 ca		
1.2E-01 i	3.0E-02 i	1.2E-01 r	3.0E-02 r	0	0.25	87-86-5	Pentachlorophenol	2.5E+00 ca	1.5E+01 ca	5.6E-02 ca	5.6E-01 ca	3.0E-02	1.0E-03
	5.0E-04 n			0	0.01	7601-90-3	Perchlorate	3.7E+01 nc	9.4E+02 nc		1.8E+01 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	52645-53-1	Permethrin	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	2.5E-01 i		2.5E-01 r	0	0.10	13684-63-4	Phenmedipham	1.4E+04 nc	1.0E+05 max	9.1E+02 nc	9.1E+03 nc		
	6.0E-01 i		6.0E-01 r	0	0.10	108-95-2	Phenol	3.3E+04 nc	1.0E+05 max	2.2E+03 nc	2.2E+04 nc	1.0E+02	5.0E+00
	2.0E-03 n		2.0E-03 r	0	0.10	92-84-2	Phenothiazine	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	6.0E-03 i		6.0E-03 r	0	0.10	108-45-2	m-Phenylenediamine	3.3E+02 nc	6.4E+03 nc	2.2E+01 nc	2.2E+02 nc		
	1.9E-01 h		1.9E-01 r	0	0.10	106-50-3	p-Phenylenediamine	1.0E+04 nc	1.0E+05 max	6.9E+02 nc	6.9E+03 nc		
	8.0E-05 i		8.0E-05 r	0	0.10	62-38-4	Phenylmercuric acetate	4.4E+00 nc	8.6E+01 nc	2.9E-01 nc	2.9E+00 nc		
1.9E-03 h		1.9E-03 r		0	0.10	90-43-7	2-Phenylphenol	2.3E+02 ca	1.5E+03 ca	3.5E+00 ca	3.5E+01 ca		
	2.0E-04 h		2.0E-04 r	0	0.10	298-02-2	Phorate	1.1E+01 nc	2.1E+02 nc	7.3E-01 nc	7.3E+00 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	732-11-6	Phosmet	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	3.0E-04 h		8.6E-05 i	0	0.10	7803-51-2	Phosphine	1.6E+01 nc	3.2E+02 nc	3.1E-01 nc	1.1E+01 nc		
			2.9E-03 i	n/a	n/a	7664-38-2	Phosphoric acid			1.0E+01 nc			
	2.0E-05 i			0	0.01	7723-14-0	Phosphorus (white)	1.5E+00 nc	3.7E+01 nc		7.3E-01 nc		
	1.0E+00 h		1.0E+00 r	0	0.10	100-21-0	p-Phthalic acid	5.5E+04 nc	1.0E+05 max	3.7E+03 nc	3.7E+04 nc		
	2.0E+00 i		3.4E-02 h	0	0.10	85-44-9	Phthalic anhydride	1.0E+05 max	1.0E+05 max	1.2E+02 nc	7.3E+04 nc		
	7.0E-02 i		7.0E-02 r	0	0.10	1918-02-1	Picloram	3.8E+03 nc	7.5E+04 nc	2.6E+02 nc	2.6E+03 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	23505-41-1	Pirimiphos-methyl	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
8.9E+00 h	7.0E-06 h	8.9E+00 r	7.0E-06 r	0	0.10		Polybrominated biphenyls	5.0E-02 ca**	3.4E-01 ca*	7.6E-04 ca*	7.6E-03 ca*		
2.0E+00 i		2.0E+00 r		0	0.14	1336-36-3	Polychlorinated biphenyls (PCBs)	2.0E-01 ca**	1.3E+00 ca*	3.4E-03 ca*	3.4E-02 ca*		
	7.0E-05 i		7.0E-05 r	0	0.14	12674-11-2	Aroclor 1016 (see PCBs for cancer endpoint)	3.4E+00 nc	6.3E+01 nc	2.6E-01 nc	2.6E+00 nc		
	2.0E-05 i		2.0E-05 r	0	0.14	11097-69-1	Aroclor 1254 (see PCBs for cancer endpoint)	9.7E-01 nc	1.8E+01 nc	7.3E-02 nc	7.3E-01 nc		
					0.13		Polynuclear aromatic hydrocarbons (PAHs)						
	6.0E-02 i		6.0E-02 r	1	0.13	83-32-9	Acenaphthene	2.6E+03 nc	2.8E+04 nc	2.2E+02 nc	3.7E+02 nc	5.7E+02	2.9E+01
	3.0E-01 i		3.0E-01 r	1	0.13	120-12-7	Anthracene	1.4E+04 nc	2.2E+05 nc	1.1E+03 nc	1.8E+03 nc	1.2E+04	5.9E+02
7.3E-01 n		3.1E-01 n		0	0.13	56-55-3	Benz[a]anthracene	5.6E-01 ca	3.6E+00 ca	2.2E-02 ca	9.2E-02 ca	2.0E+00	8.0E-02
7.3E-01 n		3.1E-01 n		0	0.13	205-99-2	Benzo[b]fluoranthene	5.6E-01 ca	3.6E+00 ca	2.2E-02 ca	9.2E-02 ca	5.0E+00	2.0E-01
7.3E-02 n		3.1E-02 n		0	0.13	207-08-9	Benzo[k]fluoranthene	5.6E+00 ca	3.6E+01 ca	2.2E-01 ca	9.2E-01 ca	4.9E+01	2.0E+00

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TOXICITY INFORMATION						CONTAMINANT	PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS					
				V	skin						Migration to Ground Water	
SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	O C	abs. soils	CAS No.		Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	DAF 20 (mg/kg)	DAF 1 (mg/kg)
							"CAL-Modified PRG" (PEA, 1994)	6.1E-01					
7.3E+00 i		3.1E+00 n		0	0.13	50-32-8	Benzo[a]pyrene	5.6E-02 ca	3.6E-01 ca	2.2E-03 ca	9.2E-03 ca	8.0E+00	4.0E-01
							"CAL-Modified PRG" (PEA, 1994)				1.5E-03		
7.3E-03 n		3.1E-03 n		0	0.13	218-01-9	Chrysene	5.6E+01 ca	3.6E+02 ca	2.2E+00 ca	9.2E+00 ca	1.6E+02	8.0E+00
							"CAL-Modified PRG" (PEA, 1994)	6.1E+00					
7.3E+00 n		3.1E+00 n		0	0.13	53-70-3	Dibenz[ah]anthracene	5.6E-02 ca	3.6E-01 ca	2.2E-03 ca	9.2E-03 ca	2.0E+00	8.0E-02
	4.0E-02 i		4.0E-02 r	0	0.13	206-44-0	Fluoranthene	2.0E+03 nc	3.7E+04 nc	1.5E+02 nc	1.5E+03 nc	4.3E+03	2.1E+02
	4.0E-02 i		4.0E-02 r	1	0.13	86-73-7	Fluorene	1.8E+03 nc	2.2E+04 nc	1.5E+02 nc	2.4E+02 nc	5.6E+02	2.8E+01
7.3E-01 n		3.1E-01 n		0	0.13	193-39-5	Indeno[1,2,3-cd]pyrene	5.6E-01 ca	3.6E+00 ca	2.2E-02 ca	9.2E-02 ca	1.4E+01	7.0E-01
	2.0E-02 i		8.6E-04 i	1	0.13	91-20-3	Naphthalene	5.5E+01 nc	1.9E+02 nc	3.1E+00 nc	6.2E+00 nc	8.4E+01	4.0E+00
	3.0E-02 i		3.0E-02 r	1	0.13	129-00-0	Pyrene	1.5E+03 nc	2.6E+04 nc	1.1E+02 nc	1.8E+02 nc	4.2E+03	2.1E+02
1.5E-01 i	9.0E-03 i	1.5E-01 r	9.0E-03 r	0	0.10	67747-09-5	Prochloraz	3.0E+00 ca	2.0E+01 ca	4.5E-02 ca	3.3E+02 ca		
	6.0E-03 h		6.0E-03 r	0	0.10	26399-36-0	Profluralin	3.3E+02 nc	6.4E+03 nc	2.2E+01 nc	2.2E+02 nc		
	1.5E-02 i		1.5E-02 r	0	0.10	1610-18-0	Prometon	8.2E+02 nc	1.6E+04 nc	5.5E+01 nc	5.5E+02 nc		
	4.0E-03 i		4.0E-03 r	0	0.10	7287-19-6	Prometryn	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc		
	7.5E-02 i		7.5E-02 r	0	0.10	23950-58-5	Pronamide	4.1E+03 nc	8.0E+04 nc	2.7E+02 nc	2.7E+03 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	1918-16-7	Propachlor	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	709-98-8	Propanil	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	2312-35-8	Propargite	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	2.0E-03 i		2.0E-03 r	0	0.10	107-19-7	Propargyl alcohol	1.1E+02 nc	2.1E+03 nc	7.3E+00 nc	7.3E+01 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	139-40-2	Propazine	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	2.0E-02 i		2.0E-02 r	0	0.10	122-42-9	Propham	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	60207-90-1	Propiconazole	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	1.0E-02 n		1.0E-02 r	1	0.10	SU 104-5-18	iso-Propylbenzene	1.2E+02 nc	4.9E+02 nc	3.7E+01 nc	6.1E+01 nc		
	1.0E-02 n		1.0E-02 r	1	0.10	SU 104-51-8	n-Propylbenzene	1.3E+02 nc	5.5E+02 nc	3.7E+01 nc	6.1E+01 nc		
	2.0E+01 h		2.0E+01 r	0	0.10	57-55-6	Propylene glycol	1.0E+05 max	1.0E+05 max	7.3E+04 nc	7.3E+05 nc		
	7.0E-01 h		7.0E-01 r	0	0.10	111-35-3	Propylene glycol, monoethyl ether	3.8E+04 nc	1.0E+05 max	2.6E+03 nc	2.6E+04 nc		
	7.0E-01 h		5.7E-01 i	0	0.10	107-98-2	Propylene glycol, monomethyl ether	3.8E+04 nc	1.0E+05 max	2.1E+03 nc	2.6E+04 nc		
2.4E-01 i	8.6E-03 r	1.3E-02 i	8.6E-03 i	1	0.10	75-56-9	Propylene oxide	1.5E+00 ca	6.8E+00 ca	5.2E-01 ca*	2.2E-01 ca		
	2.5E-01 i		2.5E-01 r	0	0.10	81335-77-5	Pursuit	1.4E+04 nc	1.0E+05 max	9.1E+02 nc	9.1E+03 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	51630-58-1	Pydrin	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	110-86-1	Pyridine	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	5.0E-04 i		5.0E-04 r	0	0.10	13593-03-8	Quinalphos	2.7E+01 nc	5.3E+02 nc	1.8E+00 nc	1.8E+01 nc		
1.2E+01 h		1.2E+01 r		0	0.10	91-22-5	Quinoline	3.7E-02 ca	2.5E-01 ca	5.6E-04 ca	5.6E-03 ca		
1.1E-01 i	3.0E-03 i	1.1E-01 r	3.0E-03 r	0	0.10	121-82-4	RDX (Cyclonite)	4.0E+00 ca*	2.7E+01 ca	6.1E-02 ca	6.1E-01 ca		
	3.0E-02 i		3.0E-02 r	0	0.10	10453-86-8	Resmethrin	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	5.0E-02 h		5.0E-02 r	0	0.10	299-84-3	Ronnel	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		
	4.0E-03 i		4.0E-03 r	0	0.10	83-79-4	Rotenone	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	78587-05-0	Savey	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	5.0E-03 i			0	0.10	7783-00-8	Selenious Acid	2.7E+02 nc	5.3E+03 nc		1.8E+02 nc		
	5.0E-03 i			0	0.01	7782-49-2	Selenium	3.7E+02 nc	9.4E+03 nc		1.8E+02 nc	5.0E+00	3.0E-01
	5.0E-03 h			0	0.10	630-10-4	Selenourea	2.7E+02 nc	5.3E+03 nc		1.8E+02 nc		
	9.0E-02 i		9.0E-02 r	0	0.10	74051-80-2	Sethoxydim	4.9E+03 nc	9.6E+04 nc	3.3E+02 nc	3.3E+03 nc		
	5.0E-03 i			0	0.01	7440-22-4	Silver and compounds	3.7E+02 nc	9.4E+03 nc		1.8E+02 nc	3.4E+01	2.0E+00
1.2E-01 h	5.0E-03 i	1.2E-01 r	2.0E-03 r	0	0.10	122-34-9	Simazine	3.7E+00 ca*	2.5E+01 ca	5.6E-02 ca	5.6E-01 ca		
	4.0E-03 i		4.0E-03 r	0	0.10	26628-22-8	Sodium azide	2.2E+02 nc	4.3E+03 nc	1.5E+01 nc	1.5E+02 nc		
2.7E-01 h	3.0E-02 i	2.7E-01 r	3.0E-02 r	0	0.10	148-18-5	Sodium diethyldithiocarbamate	1.6E+00 ca	1.1E+01 ca	2.5E-02 ca	2.5E-01 ca		
	2.0E-05 i		2.0E-05 r	0	0.10	62-74-8	Sodium fluoroacetate	1.1E+00 nc	2.1E+01 nc	7.3E-02 nc	7.3E-01 nc		

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TOXICITY INFORMATION — CONTAMINANT — PRELIMINARY REMEDIAL GOALS (PRGs) — SOIL SCREENING LEVELS

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
	1.0E-03 h		1.0E-03 r	0	0.10	13718-26-8	Sodium metavanadate	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	6.0E-01 i			0	0.01	7440-24-6	Strontium, stable	4.5E+04 nc	1.0E+05 max		2.2E+04 nc		
	3.0E-04 i		3.0E-04 r	0	0.10	57-24-9	Strychnine	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
	2.0E-01 i		2.9E-01 i	1	0.10	100-42-5	Styrene	1.7E+03 sat	1.7E+03 sat	1.1E+03 nc	1.6E+03 nc	4.0E+00	2.0E-01
	2.5E-02 i		2.5E-02 r	0	0.10	88671-89-0	Systhane	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
1.5E+05 h		1.5E+05 h		0	0.03	1746-01-6	2,3,7,8-TCDD (dioxin)	3.8E-06 ca	3.0E-05 ca	4.5E-08 ca	4.5E-07 ca		
	7.0E-02 i		7.0E-02 r	0	0.10	34014-18-1	Tebuthiuron	3.8E+03 nc	7.5E+04 nc	2.6E+02 nc	2.6E+03 nc		
	2.0E-02 h		2.0E-02 r	0	0.10	3383-96-8	Temephos	1.1E+03 nc	2.1E+04 nc	7.3E+01 nc	7.3E+02 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	5902-51-2	Terbacil	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	2.5E-05 h		2.5E-05 r	0	0.10	13071-79-9	Terbufos	1.4E+00 nc	2.7E+01 nc	9.1E-02 nc	9.1E-01 nc		
	1.0E-03 i		1.0E-03 r	0	0.10	886-50-0	Terbutryn	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	3.0E-04 i		3.0E-04 r	0	0.10	95-94-3	1,2,4,5-Tetrachlorobenzene	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
2.6E-02 i	3.0E-02 i	2.6E-02 i	3.0E-02 r	1	0.10	630-20-6	1,1,1,2-Tetrachloroethane	2.8E+00 ca	6.8E+00 ca	2.6E-01 ca	4.3E-01 ca		
2.0E-01 i		2.0E-01 i		1	0.10	79-34-5	1,1,2,2-Tetrachloroethane	3.6E-01 ca	8.7E-01 ca	3.3E-02 ca	5.5E-02 ca	3.0E-03	2.0E-04
5.2E-02 n	1.0E-02 i	2.0E-03 n	1.1E-01 n	1	0.10	127-18-4	**Tetrachloroethylene (PCE)**	4.7E+00 ca*	1.6E+01 ca	3.3E+00 ca	1.1E+00 ca	6.0E-02	3.0E-03
							"CAL-Modified PRG" (PEA, 1994)			3.2E-01			
	3.0E-02 i		3.0E-02 r	0	0.10	58-90-2	2,3,4,6-Tetrachlorophenol	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
2.0E+01 h		2.0E+01 r		0	0.10	5216-25-1	p,a,a,a-Tetrachlorotoluene	2.2E-02 ca	1.5E-01 ca	3.4E-04 ca	3.4E-03 ca		
2.4E-02 h	3.0E-02 i	2.4E-02 r	3.0E-02 r	0	0.10	961-11-5	Tetrachlorovinphos	1.9E+01 ca*	1.2E+02 ca	2.8E-01 ca	2.8E+00 ca		
	5.0E-04 i		5.0E-04 r	0	0.10	3689-24-5	Tetraethyldithiopyrophosphate	2.7E+01 nc	5.3E+02 nc	1.8E+00 nc	1.8E+01 nc		
	8.6E-02 r		8.6E-02 n	0	0.10	109-99-9	**Tetrahydrofuran**	4.7E+03 nc	9.2E+04 nc	3.1E+02 nc	3.1E+03 nc		
	7.0E-05 h			0	0.01	1314-32-5	Thallic oxide	5.2E+00 nc	1.3E+02 nc		2.6E+00 nc		
	9.0E-05 i			0	0.01	563-68-8	Thallium acetate	6.7E+00 nc	1.7E+02 nc		3.3E+00 nc	7.0E-01	4.0E-01
	8.0E-05 i			0	0.01	6533-73-9	Thallium carbonate	6.0E+00 nc	1.5E+02 nc		2.9E+00 nc	7.0E-01	4.0E-01
	8.0E-05 i			0	0.01	7791-12-0	Thallium chloride	6.0E+00 nc	1.5E+02 nc		2.9E+00 nc	7.0E-01	4.0E-01
	9.0E-05 i			0	0.01	10102-45-1	Thallium nitrate	6.7E+00 nc	1.7E+02 nc		3.3E+00 nc	7.0E-01	4.0E-01
	9.0E-05 x			0	0.01	12039-52-0	Thallium selenite	6.7E+00 nc	1.7E+02 nc		3.3E+00 nc	7.0E-01	4.0E-01
	8.0E-05 i			0	0.01	7446-18-6	Thallium sulfate	6.0E+00 nc	1.5E+02 nc		2.9E+00 nc	7.0E-01	4.0E-01
	1.0E-02 i		1.0E-02 r	0	0.10	28249-77-6	Thiobencarb	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	1.0E-01 n		1.0E-01 r	0	0.10	N/A	**Thiocyanate**	5.5E+03 nc	1.0E+05 max	3.7E+02 nc	3.7E+03 nc		
	3.0E-02 x		3.0E-02 r	0	0.10	21564-17-0	2-(Thiocyanomethylthio)- benzothiazole (TCMTB)	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	3.0E-04 h		3.0E-04 r	0	0.10	39196-18-4	Thiofanox	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
	8.0E-02 i		8.0E-02 r	0	0.10	23564-05-8	Thiophanate-methyl	4.4E+03 nc	8.6E+04 nc	2.9E+02 nc	2.9E+03 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	137-26-8	Thiram	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	6.0E-01 h			0	0.01	n/a	Tin (inorganic, see tributyltin oxide for organic tin)	4.5E+04 nc	1.0E+05 max		2.2E+04 nc		
	2.0E-01 i		1.1E-01 h	1	0.10	108-88-3	Toluene	5.2E+02 sat	5.2E+02 sat	4.0E+02 nc	7.2E+02 nc	1.2E+01	6.0E-01
3.2E+00 h		3.2E+00 r		0	0.10	95-80-7	Toluene-2,4-diamine	1.4E-01 ca	9.4E-01 ca	2.1E-03 ca	2.1E-02 ca		
	6.0E-01 h		6.0E-01 r	0	0.10	95-70-5	Toluene-2,5-diamine	3.3E+04 nc	1.0E+05 max	2.2E+03 nc	2.2E+04 nc		
	2.0E-01 h		2.0E-01 r	0	0.10	823-40-5	Toluene-2,6-diamine	1.1E+04 nc	1.0E+05 max	7.3E+02 nc	7.3E+03 nc		
1.9E-01 i		1.9E-01 r		0	0.10	106-49-0	p-Toluidine	2.3E+00 ca	1.6E+01 ca	3.5E-02 ca	3.5E-01 ca		
1.1E+00 i		1.1E+00 i		0	0.10	8001-35-2	Toxaphene	4.0E-01 ca	2.7E+00 ca	6.0E-03 ca	6.1E-02 ca	3.1E+01	2.0E+00
	7.5E-03 i		7.5E-03 r	0	0.10	66841-25-6	Tralomethrin	4.1E+02 nc	8.0E+03 nc	2.7E+01 nc	2.7E+02 nc		
	1.3E-02 i		1.3E-02 r	0	0.10	2303-17-5	Triallate	7.1E+02 nc	1.4E+04 nc	4.7E+01 nc	4.7E+02 nc		
	1.0E-02 i		1.0E-02 r	0	0.10	82097-50-5	Triasulfuron	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	5.0E-03 i		5.0E-03 r	0	0.10	615-54-3	1,2,4-Tribromobenzene	2.7E+02 nc	5.3E+03 nc	1.8E+01 nc	1.8E+02 nc		
	3.0E-04 i			0	0.10	56-35-9	**Tributyltin oxide (TBTO)**	1.6E+01 nc	3.2E+02 nc		1.1E+01 nc		
3.4E-02 h		3.4E-02 r		0	0.10	634-93-5	2,4,6-Trichloroaniline	1.3E+01 ca	8.8E+01 ca	2.0E-01 ca	2.0E+00 ca		
2.9E-02 h		2.9E-02 r		0	0.10	33663-50-2	2,4,6-Trichloroaniline hydrochloride	1.5E+01 ca	1.0E+02 ca	2.3E-01 ca	2.3E+00 ca		

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TOXICITY INFORMATION / CONTAMINANT / PRELIMINARY REMEDIAL GOALS (PRGs) SOIL SCREENING LEVELS

SFo 1/(mg/kg-d)	RfDo (mg/kg-d)	SFi 1/(mg/kg-d)	RfDi (mg/kg-d)	V O C	skin abs. soils	CAS No.	CONTAMINANT	Residential Soil (mg/kg)	Industrial Soil (mg/kg)	Ambient Air (ug/m^3)	Tap Water (ug/l)	Migration to Ground Water DAF 20 (mg/kg)	Migration to Ground Water DAF 1 (mg/kg)
	1.0E-02 i		5.7E-02 h	1	0.10	120-82-1	1,2,4-Trichlorobenzene	4.8E+02 nc	1.7E+03 sat	2.1E+02 nc	1.9E+02 nc	5.0E+00	3.0E-01
	3.5E-02 n		2.9E-01 n	1	0.10	71-55-6	1,1,1-Trichloroethane	6.8E+02 nc	1.4E+03 sat	1.0E+03 nc	7.9E+02 nc	2.0E+00	1.0E-01
5.7E-02 i	4.0E-03 i	5.6E-02 i	4.0E-03 r	1	0.10	79-00-5	1,1,2-Trichloroethane	8.2E-01 ca*	1.9E+00 ca*	1.2E-01 ca	2.0E-01 ca	2.0E-02	9.0E-04
1.1E-02 n	6.0E-03 x	6.0E-03 n	6.0E-03 r	1	0.10	79-01-6	Trichloroethylene (TCE)	2.7E+00 ca**	6.1E+00 ca*	1.1E+00 ca*	1.6E+00 ca*	6.0E-02	3.0E-03
	3.0E-01 i		2.0E-01 h	1	0.10	75-69-4	Trichlorofluoromethane	3.8E+02 nc	1.3E+03 nc	7.3E+02 nc	1.3E+03 nc		
	1.0E-01 i		1.0E-01 r	0	0.10	95-95-4	2,4,5-Trichlorophenol	5.5E+03 nc	1.1E+05 nc	3.7E+02 nc	3.7E+03 nc	2.7E+02	1.4E+01
1.1E-02 i		1.1E-02 i		0	0.10	88-06-2	2,4,6-Trichlorophenol	4.0E+01 ca	2.7E+02 ca	6.2E-01 ca	6.1E+00 ca	2.0E-01	8.0E-03
	1.0E-02 i		1.0E-02 r	0	0.10	93-76-5	2,4,5-Trichlorophenoxyacetic Acid	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
	8.0E-03 i		8.0E-03 r	0	0.10	93-72-1	2-(2,4,5-Trichlorophenoxy) propionic acid	4.4E+02 nc	8.6E+03 nc	2.9E+01 nc	2.9E+02 nc		
	5.0E-03 i		5.0E-03 r	1	0.10	598-77-6	1,1,2-Trichloropropane	1.5E+01 nc	5.1E+01 nc	1.8E+01 nc	3.0E+01 nc		
7.0E+00 h	6.0E-03 i	7.0E+00 r	5.0E-03 r	1	0.10	96-18-4	1,2,3-Trichloropropane	1.4E-03 ca	3.1E-03 ca	9.6E-04 ca	1.6E-03 ca		
	5.0E-03 h		5.0E-03 r	1	0.10	SU 96-19-5	1,2,3-Trichloropropene	1.1E+01 nc	3.8E+01 nc	1.8E+01 nc	3.0E+01 nc		
	3.0E+01 i		8.6E+00 h	1	0.10	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.6E+03 sat	5.6E+03 sat	3.1E+04 nc	5.9E+04 nc		
	3.0E-03 i		3.0E-03 r	0	0.10	58138-08-2	Tridiphane	1.6E+02 nc	3.2E+03 nc	1.1E+01 nc	1.1E+02 nc		
	2.0E-03 r		2.0E-03 i	1	0.10	SU 121-44-8	Triethylamine	2.2E+01 nc	8.6E+01 nc	7.3E+00 nc	1.2E+01 nc		
7.7E-03 i	7.5E-03 i	7.7E-03 r	7.5E-03 r	0	0.10	1582-09-8	Trifluralin	5.8E+01 ca**	3.9E+02 ca*	8.7E-01 ca*	8.7E+00 ca*		
	5.0E-02 n		1.7E-03 n	1	0.10	95-63-6	**1,2,4-Trimethylbenzene**	5.1E+01 nc	1.7E+02 nc	6.2E+00 nc	1.2E+01 nc		
	5.0E-02 n		1.7E-03 n	1	0.10	108-67-8	**1,3,5-Trimethylbenzene**	2.1E+01 nc	7.0E+01 nc	6.2E+00 nc	1.2E+01 nc		
3.7E-02 h		3.7E-02 r		0	0.10	512-56-1	Trimethyl phosphate	1.2E+01 ca	8.1E+01 ca	1.8E-01 ca	1.8E+00 ca		
	3.0E-02 i		3.0E-02 r	0	0.10	99-35-4	**1,3,5-Trinitrobenzene**	1.6E+03 nc	3.2E+04 nc	1.1E+02 nc	1.1E+03 nc		
	1.0E-02 h		1.0E-02 r	0	0.10	479-45-8	Trinitrophenylmethylnitramine	5.5E+02 nc	1.1E+04 nc	3.7E+01 nc	3.7E+02 nc		
3.0E-02 i	5.0E-04 i	3.0E-02 r	5.0E-04 r	0	0.10	118-96-7	2,4,6-Trinitrotoluene	1.5E+01 ca**	1.0E+02 ca**	2.2E-01 ca**	2.2E+00 ca**		
	7.0E-03 h			0	0.01	7440-62-2	Vanadium	5.2E+02 nc	1.3E+04 nc		2.6E+02 nc	6.0E+03	3.0E+02
	9.0E-03 i			0	0.01	1314-62-1	Vanadium pentoxide	6.7E+02 nc	1.7E+04 nc		3.3E+02 nc	6.0E+03	3.0E+02
	2.0E-02 h			0	0.01	13701-70-7	Vanadium sulfate	1.5E+03 nc	3.7E+04 nc		7.3E+02 nc	6.0E+03	3.0E+02
	1.0E-03 i		1.0E-03 r	0	0.10	1929-77-7	Vernam	5.5E+01 nc	1.1E+03 nc	3.7E+00 nc	3.7E+01 nc		
	2.5E-02 i		2.5E-02 r	0	0.10	50471-44-8	Vinclozolin	1.4E+03 nc	2.7E+04 nc	9.1E+01 nc	9.1E+02 nc		
	1.0E+00 h		5.7E-02 i	1	0.10	108-05-4	Vinyl acetate	4.2E+02 nc	1.4E+03 nc	2.1E+02 nc	4.1E+02 nc	1.7E+02	8.0E+00
1.1E-01 r	8.6E-04 r	1.1E-01 h	8.6E-04 i	1	0.10	SU 593-60-2	Vinyl bromide (bromoethene)	1.9E-01 ca*	4.2E-01 ca*	6.1E-02 ca*	1.0E-01 ca*		
1.9E+00 h		3.0E-01 h		1	0.10	75-01-4	Vinyl chloride	2.1E-02 ca	4.8E-02 ca	2.2E-02 ca	2.0E-02 ca	1.0E-02	7.0E-04
	3.0E-04 i		3.0E-04 r	0	0.10	81-81-2	Warfarin	1.6E+01 nc	3.2E+02 nc	1.1E+00 nc	1.1E+01 nc		
	2.0E+00 i		2.0E-01 x	1	0.10	108-38-3	m-Xylene	2.1E+02 sat	2.1E+02 sat	7.3E+02 nc	1.4E+03 nc	2.1E+02	1.0E+01
	2.0E+00 i		2.0E-01 x	1	0.10	95-47-6	o-Xylene	2.8E+02 sat	2.8E+02 sat	7.3E+02 nc	1.4E+03 nc	1.9E+02	9.0E+00
				1	0.10	106-42-3	p-Xylene	3.7E+02 sat	3.7E+02 sat			2.0E+02	1.0E+01
	3.0E-01 i			0	0.01	7440-66-6	Zinc	2.2E+04 nc	1.0E+05 max		1.1E+04 nc	1.2E+04	6.2E+02
	3.0E-04 i			0	0.01	1314-84-7	Zinc phosphide	2.2E+01 nc	5.6E+02 nc		1.1E+01 nc		
	5.0E-02 i		5.0E-02 r	0	0.10	12122-67-7	Zineb	2.7E+03 nc	5.3E+04 nc	1.8E+02 nc	1.8E+03 nc		

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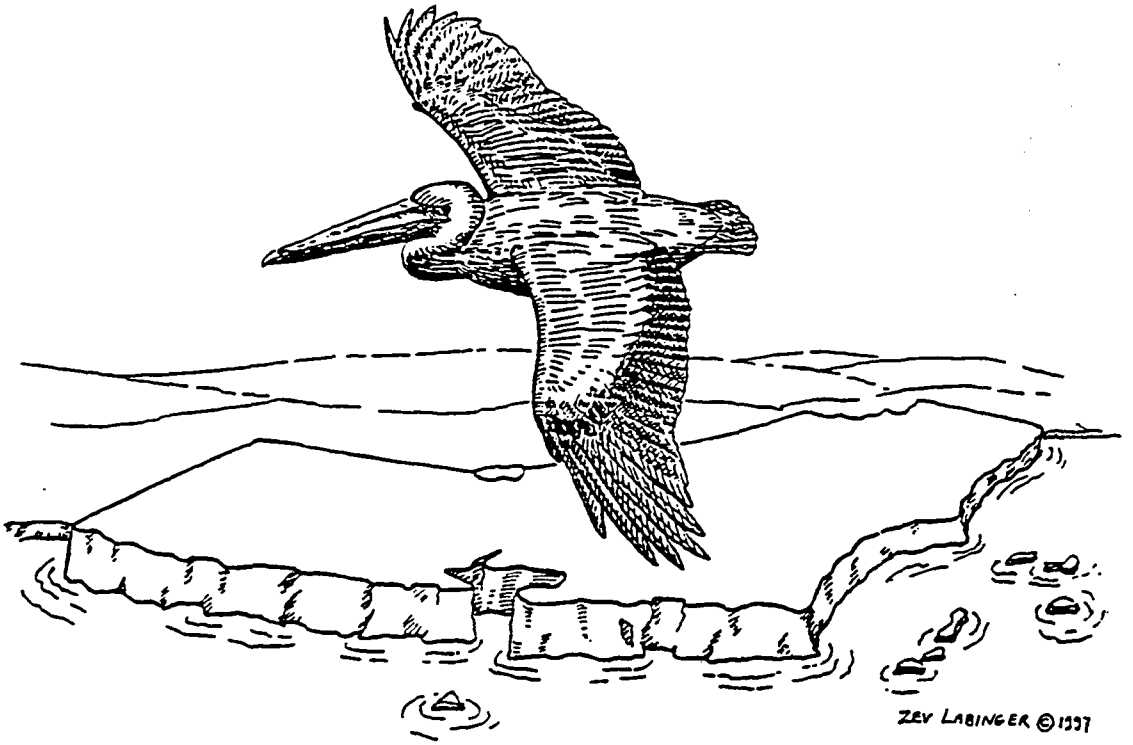
WATER QUALITY CONTROL PLAN

OCEAN WATERS OF CALIFORNIA

CALIFORNIA OCEAN PLAN



1997

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

TABLE A
EFFLUENT LIMITATIONS

	Unit of Measurement	Limiting Concentrations: Monthly (30-day Average)	Weekly (7-day Average)	Maximum at any time
Grease and Oil	mg/l	25	40	75
Suspended Solids			see below+	
Settleable Solids	ml/l	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	units		within limits of 6.0 to 9.0 at all times	
Acute* Toxicity	TUa	1.5	2.0	2.5

+Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean*, except that the effluent limitation to be met shall not be lower than 60 mg/l. Regional Boards may recommend that the SWRCB (Chapter VI.F.), with the concurrence of the Environmental Protection Agency, adjust the lower effluent concentration limit (the 60 mg/l above) to suit the environmental and effluent characteristics of the discharge. As a further consideration in making such recommendation for adjustment, Regional Boards should evaluate effects on existing and potential water* reclamation projects.

If the lower effluent concentration limit is adjusted, the discharger shall remove 75% of suspended solids from the influent stream at any time the influent concentration exceeds four times such adjusted effluent limit.

Effluent limitations shall be imposed in a manner prescribed by the SWRCB such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial* dilution, except that objectives indicated for radioactivity shall apply directly to the undiluted waste* effluent.

* See Appendix I for definition of terms.

TABLE B
WATER QUALITY OBJECTIVES

	Units of Measurement	Limiting Concentrations 6-Month Median	Daily Maximum	Instantaneous Maximum
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic	µg/l	8	32	80
Cadmium	µg/l	1	4	10
Chromium (Hexavalent) (see below, a)	µg/l	2	8	20
Copper	µg/l	3	12	30
Lead	µg/l	2	8	20
Mercury	µg/l	0.04	0.16	0.4
Nickel	µg/l	5	20	50
Selenium	µg/l	15	60	150
Silver	µg/l	0.7	2.8	7
Zinc	µg/l	20	80	200
Cyanide (see below, b)	µg/l	1	4	10
Total Chlorine Residual (For intermittent chlorine sources, see below, c)	µg/l	2	8	60
Ammonia (expressed as nitrogen)	µg/l	600	2400	6000
Chronic* Toxicity	TUc		1	
Phenolic Compounds (non-chlorinated)	µg/l	30	120	300
Chlorinated Phenolics	µg/l	1	4	10
Endosulfan	µg/l	0.009	0.018	0.027
Endrin	µg/l	0.002	0.004	0.006
HCH*	µg/l	0.004	0.008	0.012
Radioactivity				

Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Code of Regulations.

* See Appendix I for definition of terms.

Table B Continued

Chemical	30-day Average (µg/l) Decimal Notation	Scientific Notation
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH -- NONCARCINOGENS		
acrolein	220	2.2×10^{2}
antimony	1,200	1.2×10^{3}
bis(2-chloroethoxy) methane	4.4	4.4×10^{0}
bis(2-chloroisopropyl) ether	1,200	1.2×10^{3}
chlorobenzene	570	5.7×10^{2}
chromium (III)	190,000	1.9×10^{5}
di-n-butyl phthalate	3,500	3.5×10^{3}
dichlorobenzenes*	5,100	5.1×10^{3}
1,1-dichloroethylene	7,100	7.1×10^{3}
diethyl phthalate	33,000	3.3×10^{4}
dimethyl phthalate	820,000	8.2×10^{5}
4,6-dinitro-2-methylphenol	220	2.2×10^{2}
2,4-dinitrophenol	4.0	4.0×10^{0}
ethylbenzene	4,100	4.1×10^{3}
fluoranthene	15	1.5×10^{1}
hexachlorocyclopentadiene	58	5.8×10^{1}
isophorone	150,000	1.5×10^{5}
nitrobenzene	4.9	4.9×10^{0}
thallium	14	1.4×10^{1}
toluene	85,000	8.5×10^{4}
1,1,2,2-tetrachloroethane	1,200	1.2×10^{3}
tributyltin	0.0014	1.4×10^{-3}
1,1,1-trichloroethane	540,000	5.4×10^{5}
1,1,2-trichloroethane	43,000	4.3×10^{4}
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH -- CARCINOGENS		
acrylonitrile	0.10	1.0×10^{-1}
aldrin	0.000022	2.2×10^{-5}
benzene	5.9	5.9×10^{0}
benzidine	0.000069	6.9×10^{-5}
beryllium	0.033	3.3×10^{-2}
bis(2-chloroethyl) ether	0.045	4.5×10^{-2}
bis(2-ethylhexyl) phthalate	3.5	3.5×10^{0}
carbon tetrachloride	0.90	9.0×10^{-1}
chlordane*	0.000023	2.3×10^{-5}
chloroform	130	1.3×10^{2}
DDT*	0.00017	1.7×10^{-4}
1,4-dichlorobenzene	18	1.8×10^{1}
3,3'-dichlorobenzidine	0.0081	8.1×10^{-3}

* See Appendix I for definition of terms.

Table B Continued

Chemical	30-day Average (µg/l) Decimal Notation	Scientific Notation
1,2-dichloroethane	130	1.3×10^{2}
dichloromethane	450	4.5×10^{2}
1,3-dichloropropene	8.9	8.9×10^{0}
dieldrin	0.00004	4.0×10^{-5}
2,4-dinitrotoluene	2.6	2.6×10^{0}
1,2-diphenylhydrazine	0.16	1.6×10^{-1}
halomethanes*	130	1.3×10^{2}
heptachlor*	0.00072	7.2×10^{-4}
hexachlorobenzene	0.00021	2.1×10^{-4}
hexachlorobutadiene	14	1.4×10^{1}
hexachloroethane	2.5	2.5×10^{0}
N-nitrosodimethylamine	7.3	7.3×10^{0}
N-nitrosodiphenylamine	2.5	2.5×10^{0}
PAHs*	0.0088	8.8×10^{-3}
PCBs*	0.000019	1.9×10^{-5}
TCDD equivalents*	0.0000000039	3.9×10^{-9}
tetrachloroethylene	99	9.9×10^{1}
toxaphene	0.00021	2.1×10^{-4}
trichloroethylene	27	2.7×10^{1}
2,4,6-trichlorophenol	0.29	2.9×10^{-1}
vinyl chloride	36	3.6×10^{1}

a) Dischargers may at their option meet this objective as a total chromium objective.

b) If a discharger can demonstrate to the satisfaction of the Regional Board (subject to EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by Standard Methods 412F, G, and H (Standard Methods for the Examination of Water and Wastewater. Joint Editorial Board, American Public Health Association, American Water Works Association, and Water Pollution Control Federation. Most recent edition.).

c) Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation:

$$\log y = -0.43 (\log x) + 1.8$$

where: $y =$ the water quality objective (in µg/l) to apply when chlorine is being discharged;
$x =$ the duration of uninterrupted chlorine discharge in minutes.

* See Appendix I for definition of terms.

Cal/EPA

Groundwater Protection

INTERIM SITE ASSESSMENT & CLEANUP GUIDEBOOK

May 1996
California Regional Water Quality Control Board
Los Angeles and Ventura Counties
Region 4

PREVENTING GROUNDWATER POLLUTION: ASSESSING YOUR SITE FOR CHEMICAL CONTAMINANTS

Table 4-1: Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers

	Distance Above Groundwater	Carbon Range		
		C4-C12	C13-C22	C23-C32
TPH	>150 feet	1,000	10,000	50,000
	20-150 feet	500	1,000	10,000
	<20 feet	100	100	1,000

	Distance Above Groundwater	Lithology			
		Gravel	Sand	Silt	Clay
BTEX	150 feet	B=0.044 T=2 E=8 X=23	B=0.077 T=4 E=17 X=48	B=0.165 T=9 E=34 X=93	B=0.8 T=43 E=170 X=465
	80 feet	B=0.022 T=1 E=4 X=11	B=0.033 T=2 E=7 X=20	B=0.066 T=4 E=15 X=40	B=0.34 T=18 E=73 X=200
	20 feet	B=0.011 T=0.15 E=0.7 X=1.75	B=0.011 T=0.3 E=0.7 X=1.75	B=0.011 T=0.45 E=2 X=5.3	B=0.044 T=2.3 E=9 X=24.5

- TPH = Total petroleum hydrocarbons.
- BTEX = benzene, toluene, ethylbenzene, and xylenes, respectively. MCLs (ppm): B=0.001, T=0.15, E=0.7, X=1.75.
- MTBE (methyl tertiary butyl ether) must be included in BTEX analyses.
- BTEX screening concentrations determined per the attenuation factor method as described in RWQCB Guidance for VOC Impacted Sites (March 1996), with a natural degradation factor of 11 for benzene. Table values for BTEX can be linearly interpolated between distance above groundwater and are proportional to fraction of each lithological thickness.
- Values in Table 4-1 are for soils above drinking water aquifers. All groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated). Regional Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses. For non-drinking water aquifers, regardless of depth, TPH for ">150 feet" category in the table should be used; BTEX screening levels are set at 100 times respective MCLs as preliminary levels determined to be protective of human health and the environment.
- Distance above groundwater must be measured from the highest anticipated water level. Lithology is based on the USCS scale.
- For BTEX, each component is not to exceed the specified screening level.
- For TPH, the total allowable for each carbon range is not to be exceeded. In areas of naturally-occurring hydrocarbons, Regional Board staff will make allowance for TPH levels.
- BTEX to be analyzed by EPA Method 8020 or EPA Method 8260 (usually for confirmation).
- TPH to be analyzed by EPA Methods 418.1 plus 8015 (Modified). Ranges of TPH to be analyzed by GC/MS carbon range methods (EPA Method 8260) or EPA Method 8015 (Modified).

3. WATER QUALITY OBJECTIVES

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Introduction

The Clean Water Act (§303) requires states to develop water quality standards for all waters and to submit to the USEPA for approval all new or revised water quality standards which are established for inland surface and ocean waters. Water quality standards consist of a combination of beneficial uses (designated in Chapter 2) and water quality objectives (contained in this Chapter).

In addition to the federal mandate, the California Water Code (§13241) specifies that each Regional Water Quality Control Board shall establish water quality objectives. The Water Code defines water quality objectives as "the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Thus, water quality objectives are intended (i) to protect the public health and welfare and (ii) to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. Water quality objectives are achieved through Waste Discharge Requirements and other programs outlined in Chapter 4, Strategic Planning and Implementation. These objectives, when compared with future water quality data, also provide the basis for identifying trends toward degradation or enhancement of regional waters.

These water quality objectives supersede those contained in all previous Basin Plans and amendments adopted by the Los Angeles Regional Board. As new information becomes available, the Regional Board will review the objectives contained herein and develop new objectives as necessary. In addition, this Plan will be reviewed every three years (triennial review) to determine the need for modification.

Statement of Policy with Respect to Maintaining High Quality of Waters in California

A key element of California's water quality standards is the state's Antidegradation Policy. This policy, formally referred to as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Board Resolution No. 68-16), restricts degradation of surface or ground waters. In particular, this policy protects waterbodies where existing quality is higher than is necessary for the protection of beneficial uses.

Table 3-7. The Maximum Contaminant Levels: Organic Chemicals (for MUN beneficial use) specified in Table 64444-A of Section 64444 of Title 22 of the California Code of Regulations as of 9-8-94.

Constituent	Maximum Contaminant Level mg/L
A. Volatile Organic Chemicals (VOCs)	
Benzene	0.001
Carbon Tetrachloride	0.0005
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.005
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane	0.005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
Ethylbenzene	0.7
Monochlorobenzene	0.07
Styrene	0.1
1,1,2,2-Tetrachlorethane	0.001
Tetrachloroethylene	0.005
Toluene	0.15
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Trichlorofluoromethane	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2
Vinyl Chloride	0.0005
Xylenes (single isomer or sum of isomers)	1.750
B. Non-Volatile Synthetic Organic Chemicals (SOCs)	
Alachlor	0.002
Atrazine	0.003
Bentazon	0.018
Benzo(a)pyrene	0.0002
Carbofuran	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
1,2-Dibromo-3-chloropropane	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.004
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.00001
Heptachlor Epoxide	0.00001
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.04
Molinate	0.02
Oxamyl	0.2
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated Biphenyls	0.0005
Simazine	0.004
Thiobencarb	0.07
Toxaphene	0.003
2,3,7,8-TCDD (Dioxin)	$3X10^{-8}$
2,4,5-TP (Silvex)	0.05

Title: CA / California Regulations · Title 22 · Division 4.5 · Chapter 11 Article 3 · 66261.24

Section: 66261.24 Characteristic of Toxicity
Date: October 13, 1998
Subject Terms: waste | hazardous waste | definition

66261.24. Characteristic of Toxicity.

(a) A waste exhibits the characteristic of toxicity if representative samples of the waste have any of the following properties:

(1) when using the Toxicity Characteristic Leaching Procedure (TCLP) test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, third edition and Updates (incorporated by reference in section 66260.11 of this division), the extracts from representative samples of the waste contain any of the contaminants listed in Table I of this section at a concentration equal to or greater than the respective value given in that table unless the waste is excluded from classification as a solid waste or hazardous waste or is exempted from regulation pursuant to 40 CFR section 261.4. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purposes of this section;

(A) a waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the EPA Hazardous Waste Number specified in Table I of this section which corresponds to the toxic contaminant causing it to be hazardous;

(B) Table I -- Maximum Concentration of Contaminants for the Toxicity Characteristic:

FEDERAL

EPA Hazardous Waste Number	Contaminant	Chemical Abstracts Service Number	Regulatory Level Mg/l
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0{1}
D024	m-Cresol	108-39-4	200.0{1}
D025	p-Cresol	106-44-5	200.0{1}
D026	Cresol		200.0{1}
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5

D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0{2}
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

{1} If o-, m- and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

{2} Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

(2) it contains a substance listed in subsections (a)(2)(A) or (a)(2)(B) of this section at a concentration in milligrams per liter of waste extract, as determined using the Waste Extraction Test (WET) described in Appendix II of this chapter, which equals or exceeds its listed soluble threshold limit concentration or at a concentration in milligrams per kilogram in the waste which equals or exceeds its listed total threshold limit concentration;

(A) Table II -- List of Inorganic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration:

(STLC) and Total Threshold Limit Concentration (TTLC) Values.

STATE

Substance {a}{b}	STLC mg/l	TTLC Wet-Weight mg/kg
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos		1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000{c}
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5{d}	500
Chromium and/or chromium (III) compounds	5	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500{e}
Nickel and/or nickel compounds	20	2,000

Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

{a} STLC and TTLC values are calculated on the concentrations of the elements, not the compounds.
{b} In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
{c} Excluding barium sulfate.
{d} If the soluble chromium, as determined by the TCLP set forth in Appendix I of chapter 18 of this division, is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 66261.100, then the waste is a non-RCRA hazardous waste.
{e} Excluding molybdenum disulfide.

(B) Table III -- List of Organic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values:

Substance	STLC mg/l	TTLC Wet Weight mg/kg
Aldrin	0.14	1.4
Chlordane	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	--	13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10

(3) it has an acute oral LD(50), less than 5,000 milligrams per kilogram;
(4) it has an acute dermal LD(50) less than 4,300 milligrams per kilogram;
(5) it has an acute inhalation LC(50) less than 10,000 parts per million as a gas or vapor;
(6) it has an acute aquatic 96-hour LC(50) less than 500 milligrams per liter when measured in soft water (total hardness 40 to 48 milligrams per liter of calcium carbonate) with fathead minnows (Pimephales promelas), rainbow trout (Salmo gairdneri) or golden shiners (Notemigonus crysoleucas)

according to procedures described in Part 800 of the "Standard Methods for the Examination of Water and Wastewater (16th Edition)", American Public Health Association, 1985 and "Static Acute Bioassay Procedures for Hazardous Waste Samples," California Department of Fish and Game, Water Pollution Control Laboratory, revised November 1988 (incorporated by reference, see section 66260.11), or by other test methods or test fish approved by the Department, using test samples prepared or meeting the conditions for testing as prescribed in subdivisions (c) and (d) of Appendix II of this chapter, and solubilized, suspended, dispersed or emulsified by the cited procedures or by other methods approved by the Department;

(7) it contains any of the following substances at a single or combined concentration equal to or exceeding 0.001 percent by weight:

(A) 2-Acetylaminofluorene (2-AAF);
(B) Acrylonitrile;
(C) 4-Aminodiphenyl;
(D) Benzidine and its salts;
(E) bis (Chloromethyl) ether (BCME);
(F) Methyl chloromethyl ether;
(G) 1,2-Dibromo-3-chloropropane (DBCP);
(H) 3,3'-Dichlorobenzidine and its salts (DCB);
(I) 4-Dimethylaminoazobenzene (DAB);
(J) Ethyleneimine (EL);
(K) alpha-Naphthylamine (1-NA);
(L) beta-Naphthylamine (2-NA);
(M) 4-Nitrobiphenyl (4-NBP);
(N) N-Nitrosodimethylamine (DMN);
(O) beta-Propiolactone (BPL);
(P) Vinyl chloride (VCM);

(8) it has been shown through experience or testing to pose a hazard to human health or environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment.

(b) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have the property specified in subsection (a)(5) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and its head space vapor contains no such toxic materials in concentrations exceeding their respective acute inhalation LC(50) or their LC(LO). The head space vapor of a waste shall be prepared, and two milliliters of it shall be sampled using a five milliliter gas-tight syringe, according to Method 5020 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982 (incorporated by reference, see section 66260.11). The quantity in milligrams of each material, which exhibits the characteristic of toxicity because it has the property specified in subsection (a)(5) of this section, in the sampling syringe shall be determined by comparison to liquid standard solutions according to the appropriate gas chromatographic procedures in Method 8010, 8015, 8020, 8030 or 8240 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 (incorporated by reference, see section 66260.11). The concentration of each material in the head space vapor shall be calculated using the following equation:

$$C(A) = \frac{Q(A)}{\text{------}} \times \frac{29.8\ \text{ml}}{\text{--------}} \times \frac{1}{\text{----------}}$$

MW mmole 2 x 10[-6]M[3]

where C (in parts per million) is the concentration of material A in head space vapor, Q (in milligrams) is the quantity of material A in sampling syringe and MW (in milligrams per millimole) is the molecular weight of material A. Where an acute inhalation LC(50) is not available with an LC(50) measured for another time (t) may be converted to an eight-hour value the following equation:

Eight-hour LC(50) = (t/8) x (t-hour LC(50)).

(c) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have either of the properties specified in subsection (a)(3) or (a)(4) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and the calculated oral LD(50) of the waste mixture is greater than 5,000 milligrams per kilogram and the calculated dermal LD(50) is greater than 4,300 milligrams per kilogram by the following equation:

$$\text{Calculated oral or dermal LD(50)} = \frac{100}{\sum_{x=1}^{n} \frac{\%A(x)}{[T]A(x)}}$$

where %A(x) is the weight percent of each component in the waste mixture and [T]A(x) is the acute oral or dermal LD(50) or the acute oral LD(LO) of each component.

NOTE: Authority cited: Sections 25141, 25159, 58004, and 58012, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.24.

HISTORY:

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 23).
2. Amendment filed 1-31-94; effective upon filing (Register 94, No. 6).
3. Amendment filed 10-13-98; effective thirtieth day thereafter (Register 98, No. 43).

APPENDIX B

SPILL LOG, 1998 TO 1996

LIST OF ACRONYMS AND ABBREVIATIONS

Approx.	Approximately
AFFF	Aqueous Film Forming Foam
ATF	Automatic Transmission Fluid
Bl	Boulevard
Bldg	Building
CHT	Chemical Hold Tank
DDK	Drydock
DFM	Diesel Fuel Marine
DRMO	Defense Reutilization and Marketing Office
EN	East North
Ft	Feet
Gal	Gallons
HWAA	Hazardous Waste Amendments Act
JP	Jet Fuel
lbs	Pounds
NAVSTA	Naval Station
NE	North East
NEX	Naval Exchange
NW	North West
Oz	Ounce
Qt	Quart
Rd	Road
S	South
SE	Southeast
St	Street
U.S.S.	United States Ship
W	West

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
03/10/95	Building 727 W	Potassium Permanganate Solution	200		
03/20/95	Pier 6 W	Hydraulic Fluid	2	PIER	6
03/25/95	Drydock 2 N	Diesel Fuel	20	DDK	2
04/03/95	Building 101	Gasoline	50	BLDG	101
04/04/95	Bldg. 210 NE (Plating Shop)	X Rinse Water Scrubber		BLDG	210
04/04/95	Pier 6 E	Diesel Fuel	1 pint	PIER	6
04/05/95	Drydock 2	Preservative (Rudder)	30	DDK	2
04/12/95	Building 58 (Pier 6)	Diesel Fuel	1 pint	BLDG	58
04/12/95	Drydock 2 E	Seawater	500	DDK	2
04/24/95	Pier 6	Marine Diesel Fuel	20	PIER	6
04/24/95	Pier 6 E	Water/Oil	7	PIER	6
04/25/95	Building 210 NE	Fuel Oil	2	BLDG	210
04/28/95	Pier 6 E	DFM	10	PIER	6
04/30/95	Pier 1	Waste Oil	1	PIER	1
05/09/95	Marina (Dock C) NAV STA	Diesel or Lube Oil	1/2 pint		
05/21/95	Marina (Dock D) NAV STA	Diesel Fuel	60		
05/23/95	Pier 7 E NAV STA	Oil	15		
05/31/95	Warehouse A (South)	Hydraulic Fluid	2	BLDG	A
06/05/95	NEX Service Station NAV STA	Gasoline	12		
06/15/95	Pier 1 E	AFFF	56	PIER	1
06/15/95	Drydock 3 E	Diesel	1	DDK	3
07/11/95	Building 100 E	Water	20	BLDG	100
07/29/95	Pier 7 NAV STA	DFM - Water	20		
07/18/95	Pier 1	Hydraulic Oil	2	PIER	7
08/01/95	Harbor/Marina (Dock C) NAV STA	Diesel Fuel	Unknown		
08/07/95	Between Pier 1 and 2 - outboard YO-47	Dirty Water and Oil	5	PIER	1 & 2
08/11/95	Drydock 3 W	Petroleum Hydrocarbons w/ Butyl Acetate, 3%	40	DDK	3
08/15/95	Pier 7 NW NAV STA	Lubricating Oil	1 qt		
08/15/95	U.S.S. Antietem, Pier 7 W NAV STA	Waste Oil	4		
09/05/95	Building 210 SE	Hydraulic Fluid	30	BLDG	210
09/06/95	P-7 outboard U.S.S. Antietam NAV STA	#2 Diesel Fuel	1		
09/26/95	Pier 3 SW, Pier 16 E	Bilge Water-Oil (?)	Large Sheen	PIER	3
09/26/95	Scrapyard, Westside of F/M's Office Area	Diesel Fuel	3	SLYD	1

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
07/05/94	Pier 9 NAV STA	DFM	30		
07/12/94	Pier E	Liquid Decking Material	3	PIER	E
07/21/94	Between Pier 7 & 9 NAV STA	DFM	Sheen		
07/26/94	Pier 7 NAV STA	JP-5	10		
08/15/94	Building 210	Scrubber Tank Water	400	BLDG	210
08/17/94	Between Pier 1 & 2	Oil	10	BLDG	1 & 2
09/12/94	Sullivan St. ?	Paint	15		
09/13/94	Building 108 E	Saltwater with 1.99 ppm of copper	200	IWF	108
09/28/94	Pier E	Emulsified Oil	2	PIER	E
09/30/94	Ex-Naval Station Laundry NAV STA	Gasoline	3		
10/04/94	Building 207	Mercury	3 oz	BLDG	207
10/20/94	Building 132		3	BLDG	132
10/24/94	Drydock 1	Motor Oil	1	DDK	1
10/26/94	Pier E	JP-5	1	PIER	E
11/15/94	Building 101	Diesel Gas	4	BLDG	101
11/28/94	Building 210	Transformer Oil	1/4 pint	BLDG	210
12/15/94	Drydock 3	Saltwater/Dirty Water	200	DDK	3
01/11/95	Gym Parking Lot NAV STA	Unleaded Gas	10		
01/12/95	Pier 6 E	Emulsified Oil	1	PIER	6
01/12/95	Pier 7 E NAV STA	Hydraulic Fluid	1		
01/23/95	Building 128 SE	Hydraulic Fluid	3	BLDG	128
01/30/95	Building 303 E	Water/Oil	Unknown	BLDG	303
01/31/95	Pier 7 NAV STA	Hydraulic Fluid	1 quart		
02/02/95	NEX Service Station NAV STA	Hydraulic Oil	5		
02/02/95	DRMO Scrap Yard	Waste Oil	3		
02/02/95	NEX Service Station NAV STA	Hydraulic Fluid	5		
02/06/95	Pier 6 W	Diesel Fuel	1	PIER	6
02/06/95	Building 205 N	Antifreeze	2	BLDG	205
02/07/95	Pier 6 W	Emulsified Oil	20	PIER	6
02/21/95	Parking Lot M	Gasoline	1	PRKG	M
02/21/95	Building 101	Diesel Fuel	5	BLDG	101
02/21/95	Hill to Building 300	Paint	5	BLDG	300
02/23/95	Road leading to Pier 6	Zinc Paint	1	PIER	6

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
02/08/94	Marina Dock A-71	Gasoline	1		
02/09/94	NEX Service Station	Diesel Fuel	1		
02/09/94	Idaho St. NE of Fire Dept.	Hydraulic Fluid	5	BLDG	5
02/09/94	Gate 10	Hydraulic Fluid	1	DDK	1
02/14/94	Pier E S	Oil & Paint	5 QT	PIER	E
02/16/94	Pier 3 E	Oil	2	PIER	3
02/22/94	Building 132 & DRMO	Oil with dye	25	BLDG	132
02/22/94	Drydock 1 W	Lube Oil	10	DDK	1
02/27/94	Pier 16 E	DFM	5		
02/28/94	Pier E	Hydraulic Fluid	2	PIER	E
03/09/94	Pier 16	sheen	Sheen		
03/14/94	Drydock 1 E	Citric Acid	Unknown	DDK	1
03/25/94	Pier 9	DFM	Sheen		
03/30/93	Pier 9	Emulsified Oil	5		
03/30/93	Drydock 1	Paint	1	DDK	1
04/01/94	Drydock 2 W	Oil/Water	75	DDK	2
04/04/94	Building 127 N	Peanut Oil	3	BLDG	127
04/04/94	Pier 2 W	DFM	3	PIER	2
04/12/94	Building 303 SW	Black Oil Residue	2	BLDG	303
04/14/94	Pier 16 W	Oil/Concrete Cleaner	3		
04/18/94	Gate 2	Oil	5	BLDG	63
04/18/94	Pier E W	Fuel	1	PIER	E
04/20/94	Drydock 1 W	Hydraulic Fluid	6	DDK	1
04/21/94	Pier E W	Waste Oil	3	PIER	E
04/22/94	Pier 7 W	Diesel Fuel	15		
04/25/94	Building 129 E	Sodium chromate/ sodium phosphate	2 lbs	BLDG	129
04/26/94	DRMO scrap yard	Oil	10		
04/28/94	Between Pier 1 & 2	Oil	5	PIER	1 & 2
04/28/94	Fire Station	Gasoline	3		
05/04/94	Drydock 1 E	Water with 0.3% Sodium Nitrate	1500	DDK	1
05/18/94	Drydock 1	Preservative	5	DDK	1
05/23/94	Drydock 2	Oily Wastewater	1	DDK	2
05/26/94	Building 10	Paint	5		

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
11/21/93	Pier 7	DFM	7		
11/21/93	Pier E	DFM	1	PIER	E
11/22/93	Drydock 1	Hydraulic Fluid	Unknown	DDK	1
11/23/93	DRMO Scrap Yard	Oil	10		
11/24/93	Pier 7	Abandoned Waste	2 5 -gal cans		
11/29/93	Pier E	DFM/Water	5	PIER	E
11/30/93	Pier 2 E	Lube Oil	Sheen	PIER	2
11/30/93	Pier 9	Cabosil	10 lb bag		
12/01/93	Drydock 1 SE	CHT/Water	5	DDK	1
12/07/93	27656 SLOAT San Pedro	Battery Acid	1 battery		
12/15/93	Building 101	Gasoline	4	BLDG	101
12/15/93	Pier 9	DFM	Sheen		
12/15/93	Main Gate	Diesel	20		
12/17/93	DRMO Scrap Yard	Lube Oil	5		
12/18/93	Drydock 1	Water/Oil	80	DDK	1
12/29/93	Pier 6	JP-5	20	PIER	6
01/03/94	Pier 3 W	Oil/Water	5	PIER	3
01/03/94	Building 98 W	Mercury	6 oz	BLDG	98
01/03/94	Mole	DFM	10		
01/04/94	Not listed	Diesel Fuel	6		
01/04/94	Main gate	Oil	1		
01/07/94	Pier 3 E	Lube Oil	2	PIER	3
01/12/94	Between Pier 1 & 2	sheen	Sheen	PIER	1 & 2
01/12/94	Building 132 SE	Toluene Diisocyanate	5 containers	BLDG	132
01/14/94	Drydock 1 W	AFFF	4 lbs	DDK	1
01/18/94	Pier 6	Paint Thinner	1	PIER	6
01/21/94	Pier 7	Oil	1		
01/21/94	Pier 9	Hydraulic Fluid	3		
01/25/94	Drydock 1 NE	Hydraulic Fluid	3	DDK	1
01/25/94	Drydock 1 NE	Hydraulic Fluid	Unknown	DDK	1
01/26/94	Pier 6	Diesel Fuel	5	PIER	6
01/27/94	Building 53 S	Hydraulic Fluid	3	BLDG	53
01/28/94	Nevada & Richardson	Gasoline	3		
01/31/94	Pier 16	Oil	1		
02/02/94	Pier 3 NW	Lube Oil	2	PIER	3

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
10/05/93	Building 2	Gasoline	5		
10/06/93	Building 128 NE	Ammonia Gas	-	BLDG	128
10/07/93	Building 101	Diesel Fuel	1	BLDG	101
10/07/93	Pier 3	Water/Oil	10	PIER	3
10/08/93	Skipjack Rd.	Crude Oil/Process Water	25 Barrels	BLDG	300
10/13/93	Sewer Pit E	Oily Water/Sewage	5		
10/13/93	Pier 3 W		Sheen	PIER	3
10/14/93	Building 132	Mercury	2 oz	BLDG	132
10/14/93	Pier 3	Paint	1 QT	PIER	3
10/15/93	Building 207	Hydrocarbon	6000	BLDG	207
10/15/93	Between Pier 7 & 9	Diesel Fuel	50		
10/16/93	Pier 2 E	Diesel Fuel	10	PIER	2
10/20/93	Building 202	Hydraulic Fluid	10	PIER	202
10/21/93	Pier 2 W	Fuel Oil	5	PIER	2
10/22/93	Building 203	Battery Acid	1	BLDG	203
10/22/93	Pier 9		Sheen		
10/24/93	Pier E		Sheen	PIER	E
10/26/93	Pier 9		Sheen		
10/26/93	Pier 2	Lube Oil	30	PIER	2
10/28/93	Pier 2	Hydraulic Fluid	5	PIER	2
10/28/93	Pier 9		Sheen		
10/31/93	Pier 9	DFM	2		
11/01/93	Pier 9	DFM	2		
11/03/93	Building 132	Soluble Oil/Water	2	BLDG	132
11/03/93	Drydock 1	Rusty Water	8	DDK	1
11/08/93	Pier 1	CHT	2	PIER	1
11/08/93	Pier 9	Oil	Sheen		
11/09/93	Navy Way & Ocean Blvd.	Hydraulic Fluid	15		
11/10/93	Building 132 SE	Diesel Fuel & Cutting Oil	20	BLDG	132
11/10/93	Gate 14	Paint	1 pt	PRKG	L
11/10/93	Building 129	Gasoline		BLDG	129
11/13/93	Pier E	DFM	Sheen	PIER	E
11/16/93	Pier 7	DFM	3		
11/17/93	Building 300	Process Water/Crude Oil	20	BLDG	300
11/19/93	Building 820	Hydrochloric Acid	1		

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
08/22/93	Pier 15	Lube Oil	20		
08/23/93	Building 303	Tar	5	BLDG	303
08/23/93	Building 72	Diesel Fuel	5	BLDG	72
08/24/93	Building 303 W	Drydock Salt Water	1	BLDG	303
08/24/93	Pier 9 S	Oil Sheen	Sheen		
08/25/93	Pier 1 W	Oil Sheen	1 QT	BLDG	1
08/26/93	Pier 2 E	DFM	1	PIER	2
08/27/93	Building 129 S	Mercury	3 oz	BLDG	129
08/31/93	Pier 6	DFM	10	PIER	6
09/01/93	Pier 6 NE	DFM	10	PIER	6
09/01/93	Pier 15 E	-	Sheen		
09/01/93	Building 128	Hydraulic Fluid	4	BLDG	128
09/02/93	Pier 12	JP-5	5		
09/03/93	Drydock 2 N	Hydraulic Fluid	5	DDK	2
09/04/93	Drydock 1	Hydraulic Fluid	5	DDK	1
09/07/93	Building 132 SE	Hydraulic Fluid	5	BLDG	132
09/09/93	Parking lot C	Lube Oil	1	PRKG	C
09/09/93	Building 55	Transmission Fluid	2	BLDG	55
09/14/93	Pier 7 W	-	Sheen		
09/15/93	Pier E	DFM	1 QT	PIER	E
09/17/93	Building 1	Gasoline	10		
09/17/93	Pier E	Diesel Fuel	3	PIER	E
09/20/93	Parking Lot F	Diesel Fuel	1 QT	PIER	F
09/23/93	Building 72	Hydraulic Fluid	1	BLDG	72
09/23/93	Building 210 S	pH 9	10	BLDG	210
09/23/93	Pier T E	Hydraulic Fluid	10	PIER	E
09/24/93	Pier 6	Paint	1	PIER	6
09/28/93	Building 150	Hydraulic Fluid	30	BLDG	150
09/28/93	Pier E S	sheen	Sheen	PIER	E
09/28/93	Building 128	Acetylene Gas	-	PIER	128
09/29/93	Pier 3 W	Wastewater/Oil	Sheen	PIER	3
10/01/93	Building 132 S	Hydraulic Fluid	5	BLDG	132
10/04/93	Taco Bell	Oil/Sewer	20		
10/04/93	Pier 3	Hydraulic Fluid	3	PIER	3
10/05/93	Gate 3	Gasoline	15	BLDG	878

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
07/06/93	Mole Rd near Marina	Hydraulic Fluid	5		
07/08/93	Pier E	CHT	10	PIER	E
07/11/93	Mole	Potable Toilet Chemical/ Human Waste	30		
07/11/93	Drydock 2	DFM	30	DDK	2
07/12/93	Pier 6 parking	Gasoline	1	PIER	6
07/14/93	Pier 6	Hydraulic Fluid	10	PIER	6
07/15/93	Richardson and Maryland	Hydraulic Fluid	2		
07/15/93	Pier 7	DFM	5		
07/16/93	Drydock 2	Paint	1	DDK	2
07/21/93	Drydock 1	Sour Milk	5	DDK	1
07/21/93	Pier 2	Epoxy Adhesive	1	PIER	2
07/22/93	Pier 9	Oil Waste/Water	1		
07/22/93	Pier 15	ED-563	5		
07/24/93	Drydock 1	Lube Oil	10	DDK	1
07/25/93	Pier 9 S	Lube Oil	5		
07/27/93	Building 101	Diesel Fuel	1	BLDG	101
07/27/93	Los Alamitos Navy Housing	Hydraulic Fluid	1		
07/27/93	Drydock 1	Hydraulic Fluid	15	DDK	1
07/28/93	Drydock 1 N	Hydraulic Fluid	2	DDK	1
07/29/93	Pier 2	Paint	1	PIER	2
08/02/93	Building 300	Lube Oil	2	BLDG	300
08/04/93	Naval Reserve Compound	Wood Stain	1		
08/04/93	Main Gate	Motor Oil	15		
08/04/93	Pier 7	Dex-O-Tex Wax	10		
08/05/93	Building 215	Paint Thinner	3	BLDG	215
08/05/93	DRMO Scrap Yard	-	3		
08/06/93	Pier 3 W	Paint	1 QT	PIER	3
08/12/93	Pier E	DFM	-	PIER	E
08/17/93	Pier 7	Oily Waste Water	200	PIER	7
08/17/93	NEX Service Station	Gasoline	1		
08/18/93	HWAA 2	Cleaning Solvent	4		
08/19/93	Building 210	Dexxron II ATF	3	BLDG	210
08/20/93	Taper St.	Battery Acid	1 Battery		
08/21/93	Pier 6 NW	Oily Bilge Water	2	PIER	6

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO	
05/25/93	Pier 15 NAV STA	Lube Oil	75			
05/25/93	Drydock 3	Hydraulic Fluid	5	DDK		3
05/26/93	Pier 16 NAV STA	JP-5	10			
05/26/93	Pier 9 NAV STA	DFM	100			
05/26/93	Building 210	Hydraulic Fluid	8	BLDG		210
05/27/93	Building 210	Alkaline Solution	20	BLDG		210
05/28/93	Pier 9 NAV STA	DFM	20			
05/31/93	Pier 1	Diesel	40	PIER		1
06/01/93	Pier 1	Hydraulic Fluid	5	PIER		1
06/03/93	Building 108 N	Diesel Fuel	3	BLDG		108
06/03/93	Pier T	JP-5	20	PIER	E	
06/03/93	Pier 1 W	Oily Water	2	PIER		1
06/04/93	Pier 1	Hydraulic Fluid	1	PIER		1
06/04/93	Drydock 2 NW	Oily Water	10	DDK		2
06/09/93	Pier 2	DFM	20	PIER		2
06/09/93	Drydock 2 W	Waste Oil/Water	35	DDK		2
06/10/93	Drydock 2 SE	Antifreeze	1 QT	DDK		2
06/10/93	Pier 6 W	Dex-O-Tex Wax	1 QT	PIER		6
06/10/93	Pier 6	DFM	Sheen	PIER		6
06/10/93	Pier E	Hydraulic Fluid	10	PIER	E	
06/11/93	Pier 3	Hydraulic Fluid	3	PIER		3
06/11/93	Pier 16 NAV STA	Paint	2			
06/11/93	Drydock 1	Hydraulic Fluid	3	DDK		1
06/14/93	Building 132 SE	Diesel Fuel	50	BLDG		132
06/14/93	Building 151 W	Mercury	4 oz	BLDG		151
06/15/93	Port Services	JP-5	Sheen	PIER		884
06/15/93	Pier 1	JP-5	10	PIER		1
06/17/93	Building 101	Gasoline	3	BLDG		101
06/18/93	Pier 1 W	sheen	Sheen	PIER		1
06/21/93	Building 128	Hydraulic Fluid	2	BLDG		128
06/21/93	Drydock 2	DFM	50	DDK		2
06/22/93	Drydock 2 W	DFM	50	DDK		2
06/23/93	Drydock 2 NW	Drydock Water	1	DDK		2
06/24/93	Drydock 2	DFM	20	DDK		2
07/06/93	Building 210 W	Cooking Grease	1	BLDG		210

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
03/14/93	Building 109	muriatic acid/clorox bleach	2	BLDG	109
03/15/93	Drydock 3	Hydraulic Fluid	15	DDK	3
03/15/93	NEX Service Station	Fuel	8		
03/15/93	Pier 7	Oil	10		
03/15/93	Pier E	DFM	75	PIER	E
03/18/93	DRMO Scrap Yard	Diesel Fuel	5		
03/18/93	Building 314	Oil Waste	50	BLDG	314
03/26/93	07 Compound	Laytex Paint	4	BLDG	456
03/29/93	Pier 3	DFM	50	PIER	3
03/31/93	DRMO Scrap Yard	Hydraulic Fluid	15		
04/19/93	Drydock 3	Drydock wash water	1000	DDK	3
04/22/93	Pier 6	JP-5	40	PIER	6
04/26/93	Drydock 3	Hydraulic Fluid	25	DDK	3
04/27/93	Pier E	Cooking Grease	10	PIER	E
04/27/93	Pier E	Ethyl Glycol	8	PIER	E
04/27/93	Drydock 3	Hydraulic Fluid	20	DDK	3
05/04/93	Drydock 2	Oil/Water	100	DDK	2
05/06/93	NEX Garden Shop	Muriatic Acid	2		
05/06/93	Pier 6	DFM	50	PIER	6
05/08/93	NEX Service Station	Transmission Fluid	2		
05/08/93	NEX Service Station	Ethyl Glycol/Water	3		
05/10/93	Pier E	Oily Water	30	PIER	E
05/10/93	Building 104 S	Mercury	1/4 lb.	BLDG	104
05/13/93	Pier 6	Hydraulic Fluid	2	PIER	6
05/13/93	Building 103 N	Oily Substance	15	BLDG	103
05/14/93	Pier E W	JP-5	75	PIER	E
05/19/93	Building 303	Oil Waste	20	BLDG	303
05/19/93	CIA Gate 10	Antifreeze	5	BLDG	213
05/19/93	Pier 2 E	Cooking Oil	1 QT	PIER	2
05/20/93	Pier E	Emulsified Oil	-	PIER	E
05/20/93	Pier 3	Tank Residue	2	PIER	3
05/20/93	Pier E	DFM	30	PIER	E
05/24/93	Pier E	Deck Covering Emulsion	5	PIER	E
05/24/93	Drydock 3	Water/Sodium Nitrate	1	DDK	3
05/25/93	Building 210 NE	Alkaline Solution	25	BLDG	210

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
01/18/92	Pier 16 NAV STA	Oil	150		
01/18/92	Pier E W	Oil	10	PIER	E
01/31/92	Drydock 1 E	Hydraulic Fluid	25	DDK	1
02/06/92	Drydock 1 E	Oil	20	DDK	1
02/18/92	Pier E		Sludge	PIER	E
02/19/92	Pier 6	Used Oil	12	PIER	6
02/22/92	Building 132 NW	Green dye	6	BLDG	132
02/22/92	Building 97 NW	Paint	15	BLDG	97
02/29/92	Building 101	Gasoline	8	BLDG	101
03/23/92	Drydock 1 W	Oil Waste	10	DDK	1
03/23/92	Pier 6	Paint	40	PIER	6
03/27/92	Drydock 1 E	DFM	100	DDK	1
04/30/92	Pier 16 NAV. STA	DFM	75		
06/04/92	Mole NAV STA	Paint	1		
07/31/92	Pier 15 NAV STA	Hydraulic Fluid	5		
– 08/03/92	Colorado St. and Reeves Ave. ?	Paint	30		
08/17/92	Pier 9 NAV STA	Cooking grease	1		
08/27/92	Pier E	Lubricating Oil	5	PIER	E
09/16/92	Pier E	Hydraulic Fluid	2	PIER	E
09/17/92	Pier E	Hydraulic Fluid	50	PIER	E
10/29/92	Pier E	Lubricating Oil	5	PIER	E
11/06/92	Main Gate	Lubricating Oil	1		
11/06/92	Pier 9 parking NAV STA	Lubricating Oil	1		
11/09/92	Pier 9 NAV STA	Hydraulic Fluid	1		
11/25/92	Pier 6	Hydraulic Fluid	1	PIER	6
11/29/92	Pier E	Lubricating Oil	5	PIER	E
11/18/92	Mole at Pennsylvania Ave. NAV STA	Oil & Antifreeze	4		
? 12/18/92	DRMO Scrap Yard NAV STA	Hydraulic Fluid	10		
01/03/93	Pier 3	DFM	5000	PIER	3
01/09/93	Pier 2	Hydraulic Fluid	5	PIER	2
01/21/93	Building 132	Fuel/Water	300	BLDG	132
02/19/93	Pier 1	Water/Hydrocarbon	10	PIER	1
02/19/93	Pier 12 NAV STA	JP=5	10		
03/08/93	Pier 16 NAV STA	DFM	50		
03/12/93	Drydock 1 W	Hydraulic Fluid	15	DDK	1

LBNSY Spill History, November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
08/06/90	CPO Club Building 10 NAV STA	Hydraulic Oil	3		
08/11/90	Pier E	Chocolate Milk	2	PIER	6
09/01/90	Manhole 227 C-29	Lube Oil	30	VLT	227
09/17/90	Pier 3 E	Acid/Water	20	PIER	3
10/16/90	Pier E	Aviation fuel (JP-5)	25	PIER	E
10/21/90	Drydock 1 E	Waste Oil	50	DDK	1
10/21/90	Drydock 1 E	Diesel Fluid	30	DDK	1
10/23/90	Pier 6	Paint	1	PIER	6
10/25/95	NEX Service Station NAV STA	Antifreeze	2		
11/02/90	Pier 3 E	Citric Acid/Water	25	PIER	3
11/13/90	Gate 5 E	Diesel Fluid	20	BLDG	878
11/15/90	Building 210 W	Floor Wax	25	BLDG	210
11/28/90	Building 128 NE	Hydraulic Fluid	25	BLDG	128
11/29/90	Drydock 2 W	Diesel Fuel	30	DDK	2
12/04/90	Pier 7 NAV STA.	Gasoline	2		
01/11/91	Drydock 1 W	Paint	25	DDK	1
01/22/91	Pier 16 NAV STA	Lubricating Oil	12		
01/25/91	Pier 9 NAV STA	Oil	25		
01/25/91	Pier 9 NAV STA	Hydraulic Oil	25		
01/25/91	Building 196	Antifreeze	1700	BLDG	196
02/03/91	Drydock 1	Distillate Fuel	1800	DDK	1
02/24/91	Drydock 1 W	Diesel Fuel	30	DDK	1
02/26/91	Pier 6	Floor Wax	5	PIER	6
03/04/91	Pier E	Oil	25	PIER	E
03/04/91	Pier 6	Oil	25	PIER	6
03/27/91	Hospital Housing NAV STA	Gasoline	8		
04/29/91	Main Gate NAV STA	Motor Oil	15		
08/13/91	Drydock 1 W	Diesel	20	DDK	1
09/21/91	Drydock 3 W	Diesel/Water	100	DDK	3
09/24/91	Building 201 N	Waste Oil	35	BLDG	201
10/25/91	Pier 1	Waste Oil	20	PIER	1
10/27/91	Drydock 1 Tunnel W	Waste Oil	20	DDK	1
10/31/91	Building 54 W	Diesel Fuel	40	BLDG	54
11/15/91	Pier 15 NAV STA	Oil	25		
11/24/91	Building 20 NAV STA	Oil	5		

LBNSY Spill History, November 1988 to March 1996

Date	Location		Substance	Gallons	SITE TYPE	NO
03/10/89	Warehouse E		Waste Oil	10	BLDG	E
04/28/89	Building 210 NE		Hydrochloric Acid	450	BLDG	210
05/05/89	Navy Way Rd.	NAV. STA	Lubricating Oil	3		
05/17/89	Building 133 NE		Sealing Paste	5	BLDG	303
07/25/89	Building 303 NE		Citric Acid	100	BLDG	303
08/08/89	Building 54 NE		Gasoline	15	BLDG	54
08/09/89	Gate 2		Paint	5	BLDG	63
08/09/89	Pier 3		Dex-O-Tex Wax	20	PIER	3
08/11/89	Outer Mole Rd.	NAV STA	paint	35		
10/18/89	Building 53 NW		Hydraulic Fluid	45	BLDG	53
11/07/89	Drydock 1 N		Waste Oil	125	DDK	1
11/08/89	Building 132 NE		Hydraulic Fluid	50	BLDG	132
11/13/89	Pier 2 S		Diesel Fuel	5	PIER	2
11/16/89	Drydock 1 NE		Preventative Oil	60	DDK	1
11/28/89	Building 303 SE		Waste Oil	100	BLDG	303
11/28/89	Building 303		Waste Oil	50	BLDG	303
02/08/90	Building 130 SE		Distillate Fuel	1000	BLDG	130
02/22/90	Pier 9	NAV. STA	Diesel Fuel	200		
02/26/90	Pier 15	NAV STA	Oily Waste	60		
05/17/90	Pier 1 W		Oily Waste	1400	PIER	1
06/05/90	Pier 7 parking	NAV STA	Gasoline	5	PIER	1
06/20/90	Pier 15	NAV STA	Acid	10		
06/20/90	Building 300 N		Lube Oil	20	BLDG	300
06/26/90	Pier 6		Oil	8	PIER	6
06/27/90	Building 122 W		Hydraulic Fluid	40	BLDG	122
06/27/90	Pier 3 W		Waste Oil	20	PIER	3
07/03/90	CIA Gate 3		Transmission Fluid	20	BLDG	878
07/03/90	Pier 6		Cooking Oil	8	PIER	6
07/10/90	Building 53 E		Adhesive & Paint	20	BLDG	53
07/17/90	Warehouse A S		Battery Acid	20	BLDG	A
07/18/90	Pier 3 W		Waste Lube Oil	20	PIER	3
07/26/90	Pier 6		Lubricating Oil	60	PIER	6
08/01/90	Building 55 S		Hydraulic Fluid	20	BLDG	55
08/02/90	Pier E		Lubricating Oil	6	PIER	E
08/06/90	Pier 6		Oil	15	PIER	6

LBNSY Spill History November 1988 to March 1996

Date	Location	Substance	Gallons	SITE TYPE	NO
09/28/95	Building 303, Door 5 Eastside	Mercury	< 1 pint	BLDG	303
10/02/95	Pier 7, Westside inboard of U.S.S. Antietam	Oily Wastewater	1 pint		
10/02/95	Pier 7, Eastside approx. 360 foot mark	Engine Oil	1 quart		
10/03/95	Drydock 3, Westside near brow of ship	Hydraulic Fluid	5	DDK	3
10/03/95	Gate 11, Sullivan and Nineth Avenue	Oily Waste Water w/ Metals		DDK	3
10/18/95	Drydock 2 Bottom, Westside 210 ft. - 355 ft. mark	Hydraulic Fluid	5	DDK	2
11/01/95	Finger Pier 1	DFM	2	PIER	884
11/06/95	Road leading to Gate 3 (Gate 3 and Ocean Bl.)	Gasoline	0.5	BLDG	878
11/08/95	Building 303 S, in brow area	Waste Sludge	1	BLDG	303
11/15/95	Between Piers 3 and 6 toward Mole Opening	Unknown	Unknown	PIER	3 & 6
12/07/95	Building 205	Hydraulic Fluid	2	BLDG	205
12/18/95	Pier 9 NE	Diesel Fuel	Unknown		
02/08/96	Drydock 3, Westside Storage Tank	Oily Wastewater	4	DDK	3
02/13/96	Drydock 2, U.S.S. Kinkaid	DFM	20	DDK	2
02/27/96	Pier E, Westside-South End	2% Lube Oil and Dirty Water	5	PIER	E
03/27/96	East Finger Pier 1	JP-5	1	PIER	884

APPENDIX C

SATELLITE ACCUMULATION POINTS INFORMATION

APPENDIX C
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Figure 8-1

Date: 3-16-95

MEMORANDUM

From: Code 964
To: Code 106.1 Hazardous Waste Program Manager

Subj: REQUEST FOR SATELLITE ACCUMULATION POINT (SAP) AT LONG BEACH NAVAL COMPLEX

1. Request permission to set up one Satellite Accumulation Point at:
(Note: only request one satellite per sheet)

X Building No. 98 (Shop 64, Floor_____, Columns_____)

_____ Drydock No._____; _____ foot mark, East or West (circle one)

_____ Pier No._____, _____ foot mark, East or West (circle one)

_____ USS _____, Ship Frame_____, Pier_____ or Drydock_____

POC	Alternate POC
Name: JOE FERNANDEZ	Name: VICTOR MALDONADO
Shop/Badge: 64-94119	Shop/Badge: 64-91595
Phone Ext.: 8694 Pager: ~~8694~~ 6748	Phone Ext.: 8694 Pager: 86748

2. List the waste stream(s) that will be accumulated at this SAP:

Description of Waste Stream	Generating Process	Process Location	Est. Annual Quantity
FILTERED ASBESTOS	RINSE	DELAGGING	550 GAL
WASTE WATER		ROOM	

Hazardous Waste Group Coordinator

From: Code 106.1 HW Program Manager
To: Code 964

Approved/Disapproved: Roy L Berkman

Assign SAP number: 98-64-1

R Buckman

ASBESTOS

LESS THAN 90 DAY STORAGE AREA

INSPECTION CHECKLIST

4-3-97

BUILDING	SHOP	ZONE	SITE NUMBER	COORDINATOR	TRACKING NO.
98	64	2E	8	J. FERNANDEZ	

REG.	DESCRIPTION	Y	N	COMMENTS/REPAIRS
22 CCR 66265.14	1. SECURITY FENCE W/ LOCKABLE GATE.	✓		
22 CCR 66265.14 29 CFR 1910.1001(j)(ii)	2. SIGNS: - "DANGER HAZARDOUS WASTE AREA - UNAUTHORIZED PERSONNEL KEEP OUT" (ENGLISH/SPANISH) - "DANGER - ASBESTOS - CANCER AND LUNG DISEASE HAZARD - AUTHORIZED PERSONNEL ONLY - RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA" - NFPA DIAMOND - "NO SMOKING" - "IN CASE OF EMERGENCY CONTACT FIRE DEPARTMENT AT EXT. 6333 AND CODE 1172 AT 6269" - "POINT OF CONTACT LEWIS EXT. 5694.	✓ ✓ ✓ ✓ ✓		
22 CCR 66265.32c	3. DECONTAMINATION SHOWER, FIRE EXTINGUISHER.	✓		
22 CCR 66265.32(c) 40 CFR 61.150(a)(1)(iii) BMP	4. SPILL KIT: - RED-PAINTED 55 GALLON OPEN TOP DRUM STENCILED WITH WHITE 2 INCH LETTERS "SPILL KIT & IN CASE OF SPILL CONTACT CODE 1172 AT EXT. 6269" - MINIMUM OF 2 BAGS OF ABSORBENT - ONE SHOVEL, ONE HEPA VACUUM - READ ASBESTOS PLASTIC BAGS - SEALANT FOR LEAK-TIGHT CONTAINERS - PAPER COVERALLS - COPY OF SITE SPILL CONTINGENCY PLAN.	✓ ✓ ✓ ✓ ✓ ✓		
22 CCR 66265.32a	5. INTERNAL COMMUNICATION (BULL HORN).	✓		
22 CCR 66265.32b	6. EMERGENCY COMMUNICATION (PHONE).	✓		
BMP	7. ADEQUATE LIGHTING.	✓		
BMP	8. SECONDARY CONTAINMENT (LOCKERS/ROLL-OFF BOXES).	✓		
BMP	9. MINIMUM OF 24 INCHES AISLE SPACE BETWEEN CONTAINERS.	✓		
BMP	10. CONTAINER HW LABELS FACE AISLE.	✓		
22 CCR 66265.174	11. CONTAINERS INSPECTED WEEKLY FOR LEAKS AND DETERIORATION, OFFICIAL LOG MAINTAINED - DATE, TIME, NAME OF INSPECTOR AND DISCREPANCIES FOUND.	✓		

REG.	DESCRIPTION	Y	N	COMMENTS/REPAIRS
22 CCR 66262.34f 40 CFR 61.150(a)(1)(iv)&(v)	12. CONTAINERS ARE LABELED WITH A CALIFORNIA HAZARDOUS WASTE LABEL WITH THE FOLLOWING INFORMATION FILLED IN: - GENERATOR NAME / ADDRESS - EPA ID NUMBER - CONTENTS, COMPOSITION - ACCUMULATION START DATE - CALIFORNIA WASTE CODE (CWC 151) - PHYSICAL STATE (SOLID) - HAZARDOUS PROPERTIES (TOXIC).	✓ ✓ ✓ ✓ ✓ ✓ ✓		
22 CCR 66262.34c	13. CONTAINERS DO NOT EXCEED 90 DAY STORAGE TIME.	✓		
BMP	14. HAZARDOUS WASTE INVENTORY SHEETS ARE MAINTAINED.	✓		
22 CCR 66265.174	15. CONTAINERS ARE MAINTAINED TO PREVENT RUPTURES OR SPILLS.	✓		
BMP	16. CONTAINERS TIGHTLY SECURED AND LOCKED.	✓		
BMP	17. PCBS OR REACTIVES ARE NOT BEING STORED.	✓		
BMP	18. FLAMMABLE DEBRIS (TRASH), FOOD/DRINK. SPILL RESIDUE OR STANDING WATER IS NOT VISIBLE.	✓		

REMARKS:

INSPECTOR'S NAME (PRINT): JOE FERNANDEZ	CODE: 964	EXT.: 5699
INSPECTOR'S SIGNATURE: Joe Fernandez	DATE: 4-3-97	TIME: 7:20

31 Mar 93

SATELLITE ACCUMULATION POINTS

1. Satellite accumulation point is identified by sign. [*BMP]

2. Accumulation is in DOT approved containers, 55 gallons or less (no tanks). [66265.173]

3. Accumulation limit is 55 gallons per satellite not per waste stream. [66262.34e]

4. Accumulation is at or near the point of generation and under the control of the shop/ship generating the waste. [66262.34e]

5. Containers are labelled with a California Hazardous Waste label with the following information filled in: [66262.34f]
   - Generator name/address
   - Contents, composition
   - EPA/California waste codes
   - Physical state (solid or liquid)
   - Hazardous properties (flammable, toxic, corrosive, reactive or other)

6. Container is stenciled with words, "Accumulation Start Date" and "Accumulation Full Date." [BMP]

7. Accumulation start date is filled in on container not label. [66262.34f]

8. Waste is being accumulated for no more than 270 days. [BMP]

9. Proper secondary containment is used. [BMP]

10. If more than one waste is being accumulated at this satellite, then these wastes are compatible. [66265.177]

11. Containers are properly closed. [66265.173]

12. Shop operators have quick access to a spill kit. [BMP]

13. Containers are inspected weekly for leaks and deterioration and an official log maintained recording date, time and name of inspector. [66265.174]

14. Containers are managed to prevent ruptures or spills. [66265.173]

15. Containers are compatible with waste stored in them. [66265.172]

16. Once container is full, the full date is indicated on the drum not label. [BMP]

17. Full containers are moved into Less Than 90 Day Storage Area or the Treatment, Storage and Disposal Facility (Building 314) within 72 hours. [66262.34e]

* Note: BMP= Best Management Practices

SATELLITE ACCUMULATION POINT (SAP) INSPECTION CHECKLIST

BUILDING	SHOP	ZONE	SAP NUMBER	COORDINATOR

REG	DESCRIPTION	Y	N	COMMENT
BMP	SATELLITE ACCUMULATION POINT IS IDENTIFIED BY SIGN.			
66264.173	ACCUMULATION IS IN DOT APPROVED CONTAINER (ONE- 55 GALLON DRUM OR SMALLER, NO TANKS).			
66262.34e	ACCUMULATION LIMIT IS 55 GALLONS PER SATELLITE, NOT PER WASTE STREAM.			
66262.34e	ACCUMULATION IS AT OR NEAR THE POINT OF GENERATION AND UNDER THE CONTROL OF THE OPERATOR GENERATING THE WASTE.			
66262.34f	CONTAINERS ARE LABELLED WITH A CALIFORNIA HAZARDOUS WASTE LABEL WITH THE FOLLOWING INFORMATION FILLED IN: - GENERATOR NAME/ADDRESS - EPA ID NUMBER - CONTENTS, COMPOSITION - EPA/CALIFORNIA WASTE CODES - PHYSICAL STATE (SOLID OR LIQUID) - HAZARDOUS PROPERTIES (FLAMMABLE, TOXIC, CORROSIVE, REACTIVE OR OTHER)			
BMP	CONTAINER IS STENCILED WITH WORDS, " ACCUMULATION START DATE" AND "ACCUMULATION FULL DATE."			
66262.34f	ACCUMULATION START DATE IS FILLED IN ON CONTAINER NOT HW LABEL.			
BMP	WASTE IS BEING ACCUMULATED FOR LESS THAN 270 DAYS.			
BMP	COMPATIBLE SECONDARY CONTAINMENT FOR LIQUIDS.			
66265.177	IF MORE THAN ONE WASTE IS BEING ACCUMULATED AT THIS SATELLITE, THEN WASTES MUST BE COMPATIBLE.			
66265.174	CONTAINERS ARE TIGHTLY SECURED.			

BMP- BEST MANAGEMENT PRACTICE

BMP	SPILL KIT, EYE WASH, FIRE EXTINGUISHER AND TELEPHONE LOCATED WITHIN 50 FEET OF SATELLITE.			
66265.174	CONTAINERS ARE INSPECTED WEEKLY FOR LEAKS AND DETERIORATION AND DOCUMENTATION IS MAINTAINED.			
66265.173	CONTAINERS ARE MANAGED TO PREVENT RUPTURES OR SPILLS.			
66265.172	CONTAINERS ARE COMPATIBLE WITH WASTE STORED IN THEM.			
BMP	ONCE CONTAINER IS FULL, THE FULL DATE IS INDICATED ON THE DRUM NOT HW LABEL.			
66262.34e	FULL CONTAINERS ARE MOVED INTO A LESS THAN 90 DAY STORAGE AREA OR THE TREATMENT, STORAGE AND DISPOSAL FACILITY (BUILDING 374) WITHIN 72 HOURS.			
BMP	SPACING BETWEEN SATELLITES IS NO LESS THAN 5 FEET.			
	GROUNDING STRAPS USED FOR TRANSFERRING FLAMMABLES			

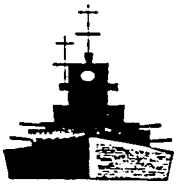
REMARKS:

INSPECTOR

DATE:

LONG BEACH NAVAL SHIPYARD

SATELLITE ACCUMULATION POINT (SAP)



WEEKLY INSPECTION CHECKLIST

BUILDING	SHOP	ZONE	SITE NUMBER	COORDINATOR	TRACKING NO.
132	96		132-26-1	URTEAGA	

REG.	DESCRIPTION	Y	N	COMMENTS/REPAIRS
22 CCR 66262.34 NAVSEA	1. TOTAL QUANTITY OF ACCUMULATED WASTE IS LESS THAN 55 GALLONS PER SAP.	✓		
22 CCR 66262.34	2. ACCUMULATION IS AT OR NEAR THE POINT OF GENERATION.	✓		
22 CCR 66262.34	3. ACCUMULATION IS UNDER THE CONTROL OF THE OPERATOR OF THE PROCESS GENERATING THE WASTE.	✓		
22 CCR 66262.34 BMP	4. WASTE IS NOT ACCUMULATED FOR LONGER THAN 270 DAYS.	✓		
22 CCR 66262.34 BMP	5. CONTAINERS ARE MOVED TO A LESS THAN 90-DAY STORAGE AREA WITHIN 72 HOURS IF EITHER: a. CONTAINER IS FULL; b. 55 GALLON ACCUMULATION LIMIT IS MET; c. 270 DAY ACCUMULATION TIME LIMIT IS MET.	✓		
22 CCR 66262.34 BMP	6. CONTAINERS ARE STENCILED/MARKED WITH THE WORDS: "ACCUMULATION START DATE: _____" "ACCUMULATION FULL DATE: _____".	✓		
22 CCR 66262.34	7. ACCUMULATION START DATE IS STENCILED/MARKED ONTO THE CONTAINER (not filled-out on the hazardous waste label).	✓		
22 CCR 66262.34	8. ONCE CONTAINER IS FULL, THE FULL DATE IS STENCILED/MARKED ON THE CONTAINER (not on the hazardous waste label).	✓		
22 CCR 66262.34 BMP	9. CONTAINER'S HAZARDOUS WASTE LABEL INCLUDES ALL OF THE FOLLOWING INFORMATION: a. GENERATOR NAME/ADDRESS; b. EPA ID NUMBER; c. CONTENTS COMPOSITION; d. PHYSICAL STATE; e. HAZARDOUS PROPERTIES (except when properties are unknown and lab results are pending);	✓		
22 CCR 66265.173 BMP	10. ACCUMULATION OF WASTE IS IN NON-RED DOT APPROVED CONTAINERS (one 55-gallon drum; or smaller containers not exceeding a combined total of 55 gallons).	✓		
22 CCR 66265.17 22 CCR 66265.177	11. INCOMPATIBLE WASTES ARE NOT PLACED IN THE SAME CONTAINER.	✓		

REG.	DESCRIPTION	Y	N	COMMENTS/REPAIRS
22 CCR 66265.17 22 CCR 66265.171 22 CCR 66265.172 22 CCR 66265.173 22 CCR 66265.174	12. CONTAINERS ARE: a. IN GOOD CONDITION (no signs of holes, large dents, corrosion, leaking, bulging, heat stress, etc.); b. SECURELY CLOSED AT ALL TIMES (except when adding or removing waste, taking lab samples, or inspecting waste); c. ARE MANAGED TO PREVENT RUPTURES OR SPILLS; d. COMPATIBLE WITH WASTE.	✓		
22 CCR 66265.17 22 CCR 66265.176	13. CONTAINERS OF IGNITABLE OR REACTIVE WASTE ARE LOCATED AT LEAST 50 FEET FROM THE FACILITY PROPERTY LINE (and protected from any heat source including radiant heat).	✓		
HWMP § 8.2(1)	14. SAP IS IDENTIFIED BY A SIGN WHICH INCLUDES ALL OF THE FOLLOWING: a. ACCUMULATION POINT NUMBER; b. POINT OF CONTACT (POC) NAME AND PHONE NUMBER; c. ALTERNATE POC AND PHONE NUMBER; d. WASTE STREAM TYPE.	✓		
HWMP § 8.2(14)	15. CONTAINERS OF LIQUIDS ARE PROVIDED WITH COMPATIBLE SECONDARY CONTAINMENT.	N/A	✓	
BMP	16. SPACING BETWEEN SAPS IS GREATER THAN 5 FT.	✓		
BMP	17. LIQUIDS AND MATERIAL ARE REMOVED FROM SECONDARY CONTAINMENT WITHIN 72 HOURS.	✓		
HWMP § 8.2(16) BMP	18. SPILL KIT AND COMMUNICATION ARE LOCATED A REASONABLE DISTANCE FROM THE SAP.	✓		
FIRE CODE	19. FIRE EXTINGUISHER IS LOCATED WITHIN 25 FEET OF SAP (if fire extinguisher is located farther than 25 feet, contact Fire Department to determine if this is acceptable).	✓		
ANSI Z-358.1	20. EYE WASH/SHOWER LOCATED WITHIN 100 FEET OR 10 SECONDS FROM POTENTIAL HAZARD.	✓		
BMP	21. CONTAINERS AND SECONDARY CONTAINMENT IN NON-ROOF AREAS ARE COVERED WHEN A POSSIBILITY OF RAIN EXISTS AND AT THE END OF WORKDAYS (the SAP sign is not covered).	N/A		
HWMP § 8.2(3)	22. ONLY COMPATIBLE WASTES SHALL BE STORED AT EACH SAP.	✓		
FIRE	23. GROUNDING STRAPS ARE USED FOR TRANSFERRING FLAMMABLES.	✓		
HWMP § 8.2(18)	24. RECORD OF HAZARDOUS WASTE STORED IN SAP IS MAINTAINED	✓		
HWMP § 8.2	25. CODE 1171 IS NOTIFIED WHEN ESTABLISHING AND DISESTABLISHING SAPS.	✓		

INSPECTOR'S NAME (PRINT): CORDERO		CODE: 930	EXT.: 6901
INSPECTOR'S SIGNATURE:		DATE: 7/8/96	TIME: 0630

106.3:LS:LS
92-272-A
30 Sep 92

MEMORANDUM

From: Code 106.3
To: Distribution

Subj: INTERIM PROCEDURE ON LABELING AND HANDLING OF HAZARDOUS WASTE CONTAINERS IN SATELLITE ACCUMULATION AREAS

Encl: (1) Satellite Area Process Overview
(2) CCR 66262.34
(3) Hazardous Waste Container Label
(4) Waste Barrel Example
(5) NAVSEA ltr 5090 OPR 07E Ser 07E/002 of 08 Jan 1990

1. To standardize the practice of accumulation of waste in the shop satellite areas the guidelines listed below are to be followed, effective immediately. A pictorial view of the process is provided in enclosure (1). Applicable state law, California Code of Regulations (CCR), Title 22, Article 3, Section 66262.34 is provided as enclosure (2). Be aware that this information is expected to change soon and new guidelines will be issued.

2. Marking of containers

Containers are to be labeled with the standard hazardous waste label, enclosure (3). **Do not** fill in the accumulation start date on this label until the barrel is transferred to a 90 day storage area or the Transfer, Storage and Disposal Facility (TSDF), building 314. For the satellite accumulation sites the accumulation start and completion dates are to be recorded above the label using a paint marker, see enclosure (4). Accumulation start date is the date the first drop or item is placed inside the container. Accumulation completion date is the date the container is full or the 270th day from the accumulation start date, **WHICHEVER IS LESS.**

3. Handling of containers

Containers are to stay at the accumulation area from the accumulation start date to the accumulation completion date **OR** not more than 270 days, **WHICHEVER IS LESS.**

When the container is full, secure the container and write the accumulation complete date on the container directly under the accumulation start date, see enclosure (4).

Within three days of the accumulation completion date the container is to be moved to a less than 90 day storage area or the TSDF.

4. Quantity of hazardous waste at an accumulation area

NAVSEA guidance, enclosure (5), is that an accumulation area shall not contain more than 55 gallons total **OF ALL TYPES OF HAZARDOUS WASTE.** Note that enclosure (5) is more restrictive than state law.

5. Ensure widest distribution. Point of contact is Jeff Rueb at extension 7868.

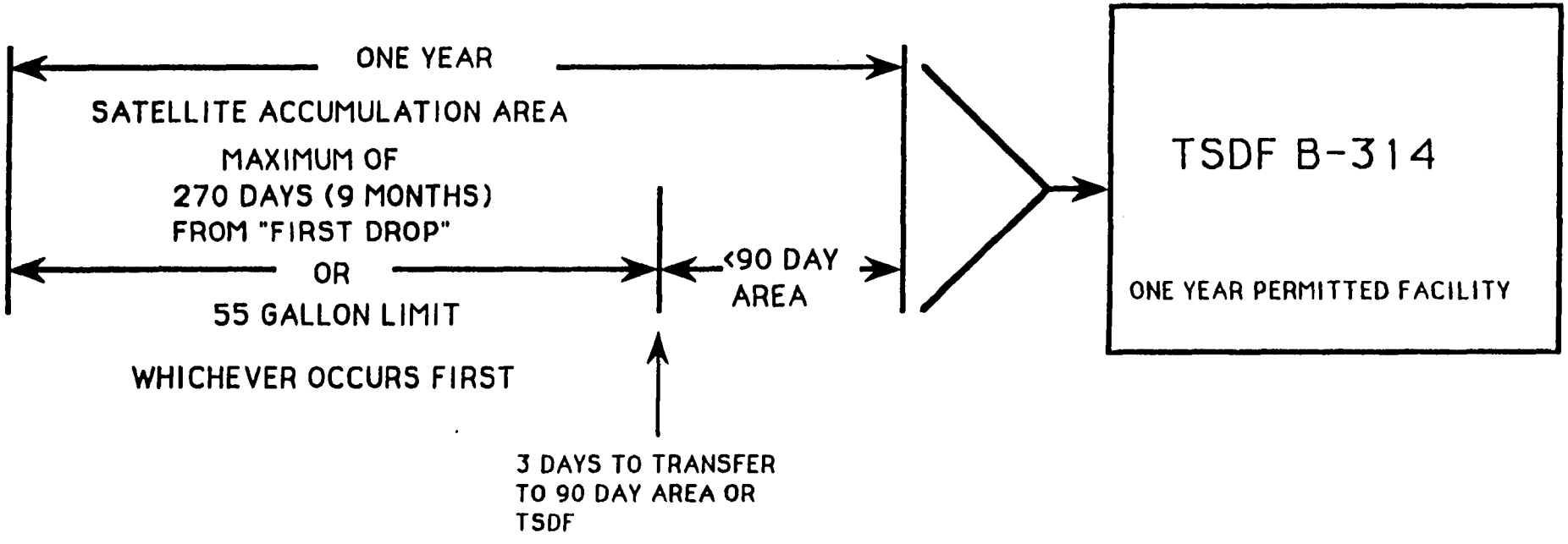
L. H. SMITH

Distribution:
Code 130
300
400
500
900
920
930
DPS LBEACH

Copy to:
Code 100
106

HAZARDOUS WASTE ACCUMULATION TIME

CALIFORNIA CODE OF REGULATIONS
TITLE 22
SECTION 66262.34



SOURCE OF IMFORMATION JEFF RUEB EXT 7868

09/25/92 J.MARANO

(3) retain two copies, in accordance with section 66262.40(a); and

(4) within 30 days of each shipment of hazardous waste submit to the ırtment a legible copy of each manifest used.

(b) The generator shall give the transporter the remaining copies of the manifest.

(c) For shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator shall send three copies of the manifest dated and signed in accordance with this section to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.

(d) For rail shipments of hazardous waste within the United States which originate at the site of generation, the generator shall send at least three copies of the manifest dated and signed in accordance with this section to:

(1) the next non–rail transporter, if any; or

(2) the designated facility if transported solely by rail; or

(3) the last rail transporter to handle the waste in the United States if exported by rail.

(e) For shipments of hazardous waste to a designated facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, the generator must assure that the designated facility agrees to sign and return the manifest to the generator, and that any out–of–state transporter signs and forwards the manifest to the designated facility.

NOTE: Authority cited: Sections 25150, 25159 and 25161, Health and Safety Code; Section 58012 of the Governor's Reorganization Plan No. 1 of 1991. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.23.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

2. Change without regulatory effect adding new subsection (e) and amending NOTE filed pursuant to section 100, title 1, California Code of Regulations (Register 92, No. 18).

Article 3. Pre–Transport Requirements

§ 66262.30. Packaging.

Before transporting hazardous waste or offering hazardous waste for transportation off–site, a generator shall package the waste in accordance with the applicable Department of Transportation regulations on packaging under Title 49 CFR Parts 173, 178, and 179.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25161, Health and Safety Code. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.30.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

§ 66262.31. Labeling.

Before transporting or offering hazardous waste for transportation off–site, a generator shall label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under Title 49 CFR Part 172.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25161, Health and Safety Code. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.31.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

§ 66262.32. Marking.

(a) Before transporting or offering hazardous waste for transportation off–site, a generator shall mark each package of hazardous waste in accordance with the applicable Department of Transportation regulations ı hazardous materials under Title 49 CFR Part 172;

(b) Before transporting hazardous waste or offering hazardous waste for transportation off–site, a generator shall mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the requirements of Title 49 CFR 172.304:

HAZARDOUS WASTE–State and Federal Law Prohibit Improper Disposal. If found, contact the nearest police or public safety authority, the U.S. Environmental Protection Agency or the California Department of Health Services.

Generator's Name and Address _____

Manifest Document Number _____

NOTE: Authority cited: Sections 208, 25150, 25159 and 25161, Health and Safety Code. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.32.

HISTORY

1. New section filed 5–28–91; operative 7–1–91 (Register 91, No. 22).

§ 66262.33. Placarding.

Before transporting hazardous waste or offering hazardous waste for transportation off–site, a generator shall ensure that the transport vehicle is correctly placarded according to Department of Transportation regulations for hazardous materials under Title 49 CFR Part 172, Subpart F.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25161, Health and Safety Code. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.33.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

§ 66262.34. Accumulation Time.

(a) Except as provided in subsection (d) of this section, a generator may accumulate hazardous waste on–site for 90 days or less without a permit or grant of interim status, provided that:

(1) the waste is placed in containers and the generator complies with article 9 of chapter 15 of this division, or the waste is placed in tanks and the generator complies with article 10 of chapter 15 of this division, except sections 66265.197(c) and 66265.200. In addition, such a generator is exempt from all the requirements in articles 7 and 8 of chapter 15 of this division, except for sections 66265.111 and 66265.114; and

(2) the generator complies with the requirements of subsection (f) of this section; and

(3) the generator complies with the requirements for owners or operators in articles 3 and 4 of chapter 15 of this division and with section 66265.16;

(4) the generator complies with the requirements for owners or operators in article 3 (commencing with section 66265.30) and 4 (commencing with section 66265.50) of chapter 15 of this division and with section 66265.16.

(b) The beginning of the 90 day period specified in subsections (a) and (c) of this section is determined as follows:

(1) if the generator does not generate more than 100 kilograms of hazardous waste or one kilogram of acutely hazardous waste (listed in section 66261.33(e)) or one kilogram of extremely hazardous waste during any calendar month, the 90 day period begins on the date the generator has accumulated 100 kilograms of hazardous waste or one kilogram of acutely hazardous waste or one kilogram of extremely hazardous waste;

(2) if the generator generates more than 100 kilograms of hazardous waste or one kilogram of acutely hazardous waste or one kilogram of extremely hazardous waste during any calendar month, the 90–day period begins on the first date on which any amount of hazardous waste begins to accumulate during that month.

(c) A generator who accumulates hazardous waste for more than 90 days is an operator of a storage facility and is subject to the requirements of chapters 14 and 15 of this division and the permit requirements of chapter 20 of this division, unless the generator has been granted an extension to the 90–day period or meets the requirements of subsection (e) of this section. An extension may be granted by the Department if hazardous wastes must remain on–site for longer than 90 days due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Department on a case–by–case basis.

(d) A generator who stores more than 5000 U.S. gallons or 45,000 pounds, whichever is greater, of hazardous waste onsite in a tank for any period of time is an operator of a storage facility, and is subject to the re-

quirements of chapters 14 and 15 of this division and the permit requirements of chapter 20 of this division.

(1) For purposes of this subsection, tank does not include a portable tank marked or labeled in compliance with subsection (f) of this section and meeting either of the following conditions:

(A) the portable tank is used to store hazardous waste onsite which has been generated from onsite maintenance operations which occur less frequently than annually; or

(B) the portable tank is used to store hazardous waste onsite for a period of not more than 60 consecutive calendar days.

(2) For purposes of this subsection, portable tank means any transportable covered or uncovered receptacle to be used for holding hazardous waste and having a capacity greater than 110 U.S. gallons.

(e)(1) A generator may accumulate as much as 55 gallons of hazardous waste, one quart of acutely hazardous waste (listed in section 66261.33(e)) or one quart of extremely hazardous waste at or near any point of generation, without a permit or grant of interim status, without complying with subsections (a), (b) and (c) of this section, if all of the following requirements are met with respect to this waste:

(A) the waste is accumulated in containers, other than tanks, at the initial accumulation point which is at or near the area where the waste is generated and which is under the control of the operator of the process generating the waste;

(B) the generator does not hold the waste onsite for more than one year from the initial date of accumulation, or 90 days from the date the quantity limitation specified in subsection (e)(1) of this section is reached, whichever occurs first;

(C) the initial date of waste accumulation is clearly marked and visible for inspection on each container used for accumulation of hazardous waste;

(D) the generator complies with sections 66265.171, 66265.172, and 66265.173(a) of this division; and

(E) the generator complies with subsections (e)(2), (e)(3) and (f)(3) of this section.

(2) Except as provided in subsections (e)(2)(A) and (e)(2)(B) of this section, a process or group of processes meeting the requirements of subsection (e)(1) of this section, shall be subject to a single 55 gallon or one quart accumulation limit for that process or group of processes.

(A) If not all of the wastestreams generated by a single process or group of processes located within the same physical area are compatible, a separate 55 gallon or one quart limit shall apply to each group of wastestreams that are compatible.

(B) If the generator determines that using only one 55–gallon or one–quart container to initially accumulate specific compatible wastestreams is not practical (e.g., prevents recycling or requires unreasonable accumulation procedures) or safe from an environmental or worker/public health and safety standpoint, the generator may use a separate 55–gallon or one–quart container for those specific compatible wastestreams. The generator's determination shall be subject to review and approval by the Department at any time.

(3) A generator who has accumulated an amount of hazardous waste, acutely hazardous waste or extremely hazardous waste equal to any applicable quantity limitation listed in subsection (e)(1) of this section at or near any point of generation shall, with respect to that waste, comply within three days with subsection (a) of this section and other applicable provisions of this division. During the three day period the generator shall continue to comply with subsection (e)(1) of this section. Within the three day period, the generator shall mark the container holding the hazardous waste with the date the applicable quantity limitation was reached.

(f) Generators who accumulate hazardous waste on site without a permit or grant of interim status shall comply with the following requirements:

(1) the date upon which each period of accumulation begins shall be clearly marked and visible for inspection on each container and portable tank;

(2) the date the 90–day period begins, for purposes of subsections (a) and (b) of this section, shall be clearly marked and visible for inspection on each container and tank; and

(3) each container and tank used for onsite accumulation of hazardous waste shall be labeled or marked clearly with the words, "Hazardous Waste." Additionally, all containers and portable tanks shall be labeled with the following information:

(A) composition and physical state of the wastes;

(B) statement or statements which call attention to the particular hazardous properties of the waste (e.g., flammable, reactive, etc.);

(C) name and address of the person producing the waste.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. References: Sections 25123.3, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 262.34.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

Article 4. Recordkeeping and Reporting

§ 66262.40. Recordkeeping.

(a) A generator shall keep a copy of each manifest signed in accordance with section 66262.23(a) for three years or until the generator receives a signed copy from the designated facility which received the waste. This signed copy shall be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

(b) A generator shall keep a copy of each Biennial Report and Exception Report for a period of at least three years from the due date of the report.

(c) A generator shall keep records of any test results, waste analyses, or other determinations made in accordance with section 66262.11 for at least three years from the date that the waste was last sent to on–site or off–site treatment, storage, or disposal.

(d) The periods or retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the USEPA Administrator or the Department.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25161, Health and Safety Code. Reference: Sections 25159, 25159.5 and 25160, Health and Safety Code; 40 CFR Section 262.40.

HISTORY

1. New section filed 5–24–91; effective 7–1–91 (Register 91, No. 22).

§ 66262.41. Biennial Report.

(a) A generator who ships any hazardous waste offsite to a transfer, treatment, storage or disposal facility within the United States shall prepare and submit a single copy of a Biennial Report, EPA Form 8700–13A/B, 5–80, (Revised 11–89) to the Department by March 1 of each even–numbered year. The Biennial Report shall be submitted on forms provided by the Department and shall cover generator activities during the previous calendar year, and shall include the following information:

(1) the identification number, name and address of the generator;

(2) the calendar year covered by the report;

(3) the identification number, name and address for each off–site transfer, treatment, storage or disposal facility in the United States to which waste was shipped during the year;

(4) the name and Identification Number of each transporter used during the reporting year for shipments to a transfer, treatment, storage or disposal facility within the United States;

(5) a description, EPA hazardous waste number (from chapter 11, articles 3 or 4 of this division, California Hazardous Waste Category Number, from chapter 11, Appendix XII, DOT hazard class, and quantity of each hazardous waste shipped offsite to a transfer, treatment, storage or disposal facility within the United States. This information shall be listed by identification number of each such offsite facility to which waste was shipped. Wastes that are classified as non–RCRA hazardous wastes can be properly described by indicating a generic name of the waste and the

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

GENERATOR INFORMATION:

NAME LONG BEACH NAVAL SHIPYARD SHOP 38

ADDRESS CODE 106 PHONE (310) 547-7868

CITY LONG BEACH STATE CA ZIP 90822-5099

EPA ID NO./MANIFEST DOCUMENT NO. CA 6170023109 /

EPA WASTE NO. D002 CA WASTE NO. 122 ACCUMULATION START DATE

CONTENTS, COMPOSITION: SODIUM HYDROXIDE 20%
SODIUM NITRITE 10%

PHYSICAL STATE: ☐ SOLID ☑ LIQUID | HAZARDOUS PROPERTIES: ☐ FLAMMABLE ☐ TOXIC ☑ CORROSIVE ☐ REACTIVITY ☐ OTHER

WASTE CORROSIVE LIQUID, N.O.S.
CORROSIVE MATERIAL UN-1760

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

STYLE 1WHC6

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
WASHINGTON DC 20362-5101

IN REPLY REFER TO
5090
OPR 07Z
Ser 07Z/002
08 Jan 1990

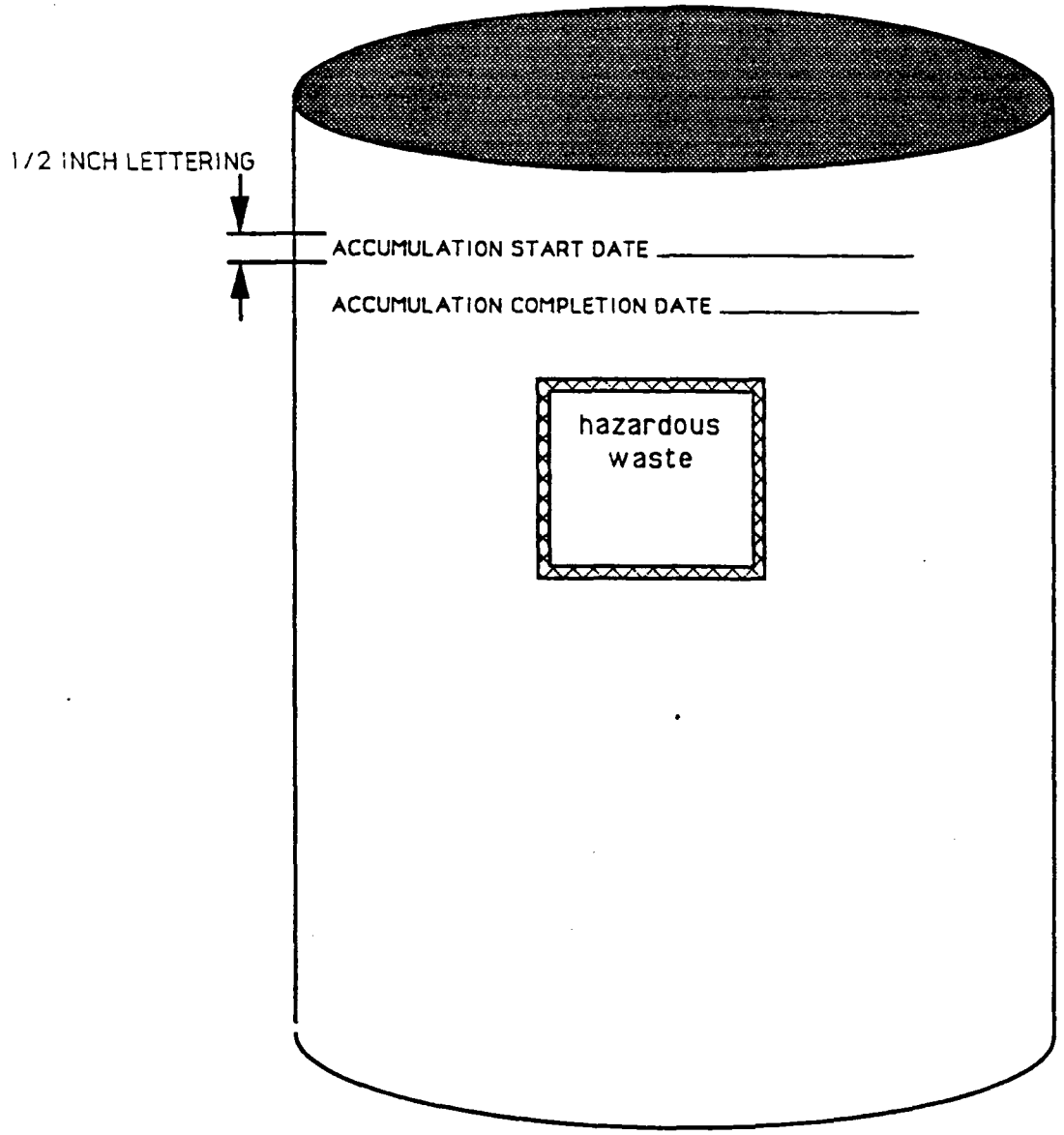
From: Commander, Naval Sea Systems Command
To: Distribution

Subj: HAZARDOUS WASTE ACCUMULATION AREAS

Encl: (1) NAVSEA Environmental Compliance Evaluation Checklist for Hazardous Waste Management

1. During a recent program assessment of hazardous waste management by the Naval Inspector General the question was raised on the application of 40 C.F.R. 262.34(a) and (c). The shipyard under review was collecting several different types of hazardous waste from the same shop on a central location in the shop. Although no more than 55 gallons of any one type of hazardous waste was collected, the total volume of all hazardous waste at the accumulation site exceeded 55 gallons. The IG questioned whether this arrangement satisfied the requirements of either 40 C.F.R. 262.34(a) or (c). The purpose of this letter is to clarify the requirements of 40 C.F.R. 262.34.

2. Under Environmental Protection Agency (EPA) regulations at 40 C.F.R. 262.34, a generator may accumulate hazardous waste at its facility without applying for a treatment, storage or disposal (TSD) permit under certain limited conditions. In all cases the hazardous waste must be properly labelled and contained. Under 40 C.F.R. 262.34(a) the generator may store hazardous waste for up to 90 days in a properly designated area generally known as a less than 90 days storage area or temporary storage area. Under 40 C.F.R. 262.34(c) a generator may collect up to 55 gallons of hazardous waste at or near the point of generation. These locations are commonly referred to as satellite accumulation points. The same generator may have both satellite accumulation points and temporary storage at its facility, although not at the same location in the facility. When the 55 gallon limit is reached at the satellite accumulation point, the generator has 3 days to move the hazardous waste to the temporary storage area or to dispose of the hazardous waste at a TSD facility. The 90 day clock of 40 C.F.R. 262.34(a) begins to run when the hazardous waste is sent to the temporary storage area from the satellite accumulation point. So, for example, it may take a small shop 4 months to generate 55 gallons of hazardous waste. The hazardous waste is collected at the shop at a satellite accumulation point. When the 55 gallon drum is full, the shipyard has 3 days to move the drum to its temporary storage area. The shipyard then has 90 days to properly dispose of the waste from the temporary storage area.



ENCL (4)

ENCLOSURE TO MEMO 9[illegible] A/[illegible]

Shipyards should be advised that based on the statements made by EPA in adopting 40 CFR 262.40(c) (49 Fed Reg 49579 - 20 Oct 1984)

3. [redacted] Dec. 1984 the 55 gallon limit for a satellite accumulation point is a total limit for all hazardous waste, not 55 gallons per type. The shipyards should review questions 19 through 48 of Enclosure 1 to assure compliance with the requirements of the regulations. Any specific questions on interpretation of the regulations or their application should be discussed with shipyard counsel.

4. The POC for this subject is R. Milner, SEA 07E2, A/V 286-5056 or Comm. (202) 746-5056.

THOMAS GROSSMAN
DIRECTOR, ENVIRONMENTAL
PROTECTION & OCCUPATIONAL
SAFETY & HEALTH OFFICE

Distribution: All Naval Shipyards

REPRODUCED AT GOVERNMENT EXPENSE

APPENDIX D

HISTORICAL AERIAL PHOTOGRAPHS

APPENDIX D
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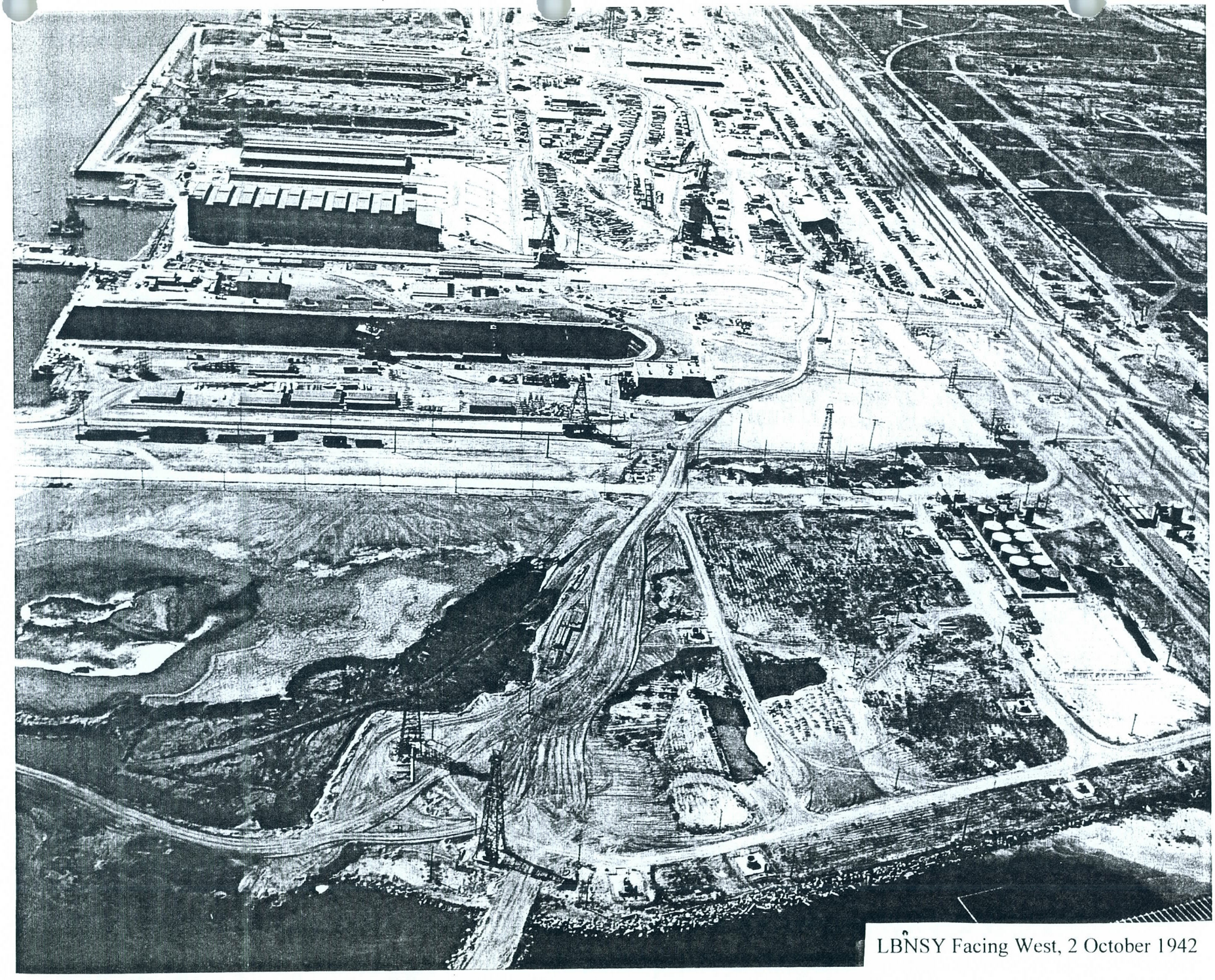
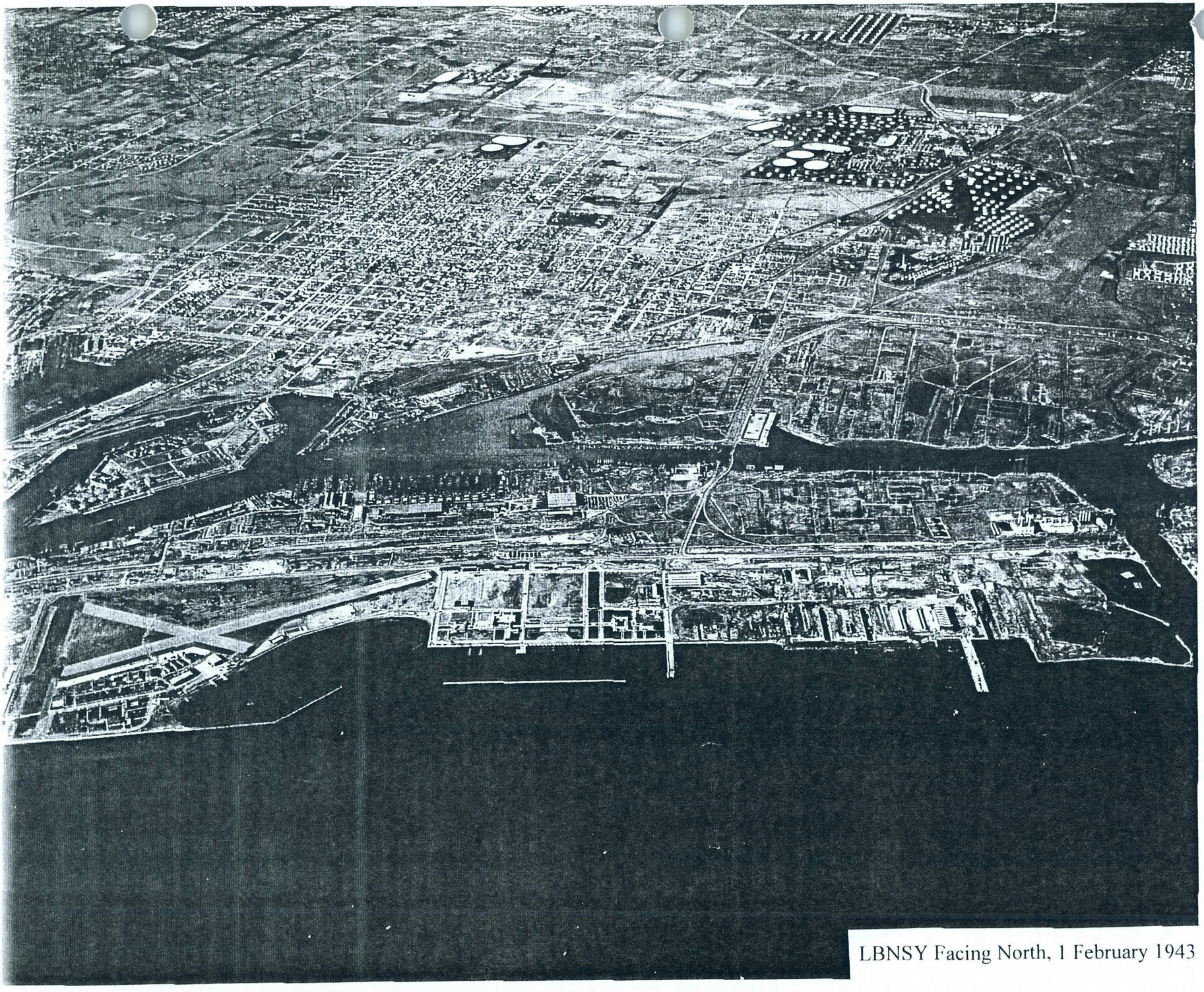
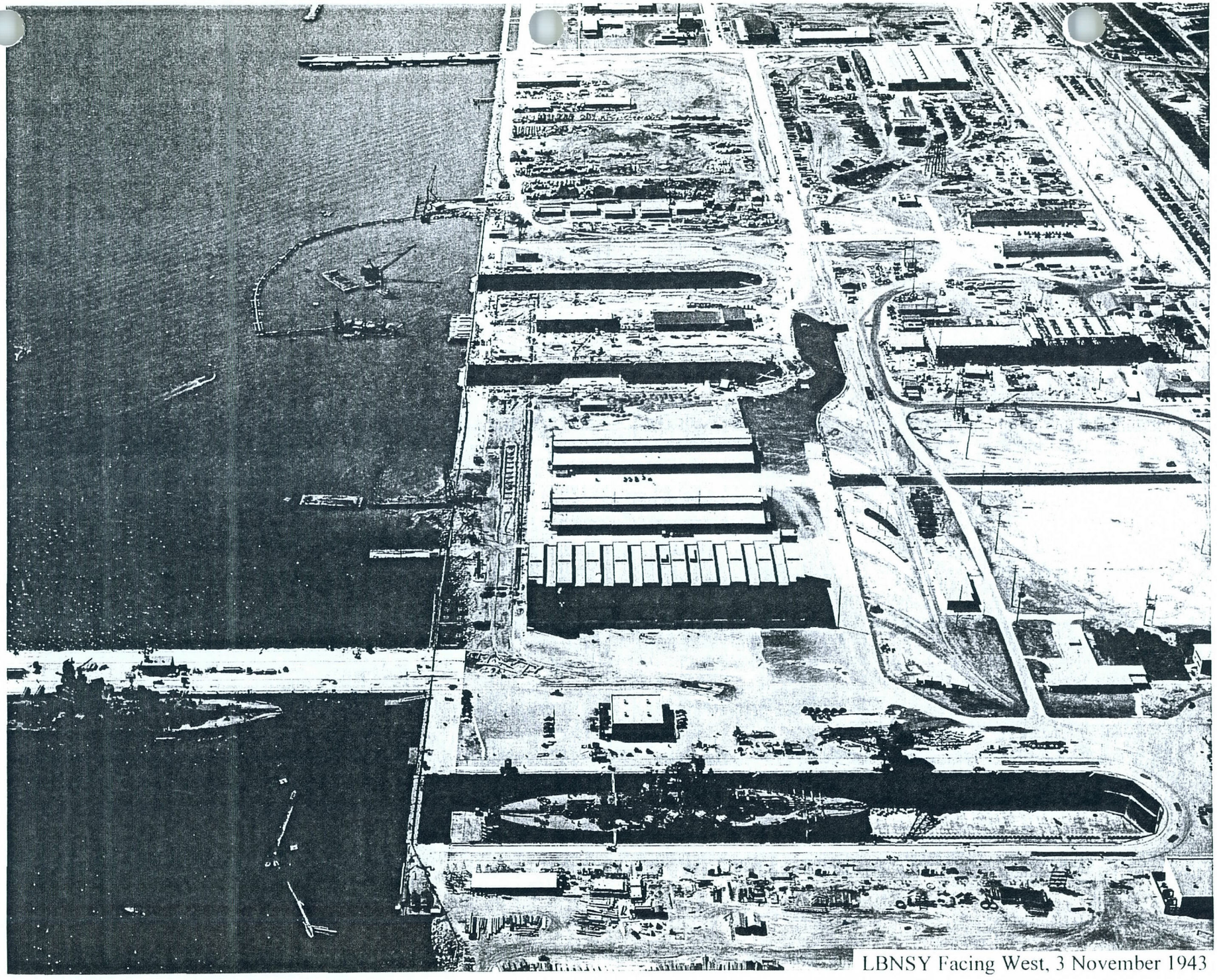
Photograph	Date
LBNSY Facing West	02 October 1942
LBNSY Facing North	01 February 1943
LBNSY Facing West	03 November 1943
LBNSY Facing West	12 December 1944
LBNSY	28 December 1944
LBNSY Facing North	14 May 1945
LBNC Facing North	29 August 1958
LBNC	07 August 1960
LBNC	26 January 1966
LBNC	circa 1960s
LBNC	circa 1980s
LBNC	08 January 1996



LBNSY Facing West, 2 October 1942



LBNSY Facing North, 1 February 1943



LBNSY Facing West, 3 November 1943

NOTES:

U. S. GOVERNMENT PRINTING OFFICE 15—10555-1

#8447

EC

4-44

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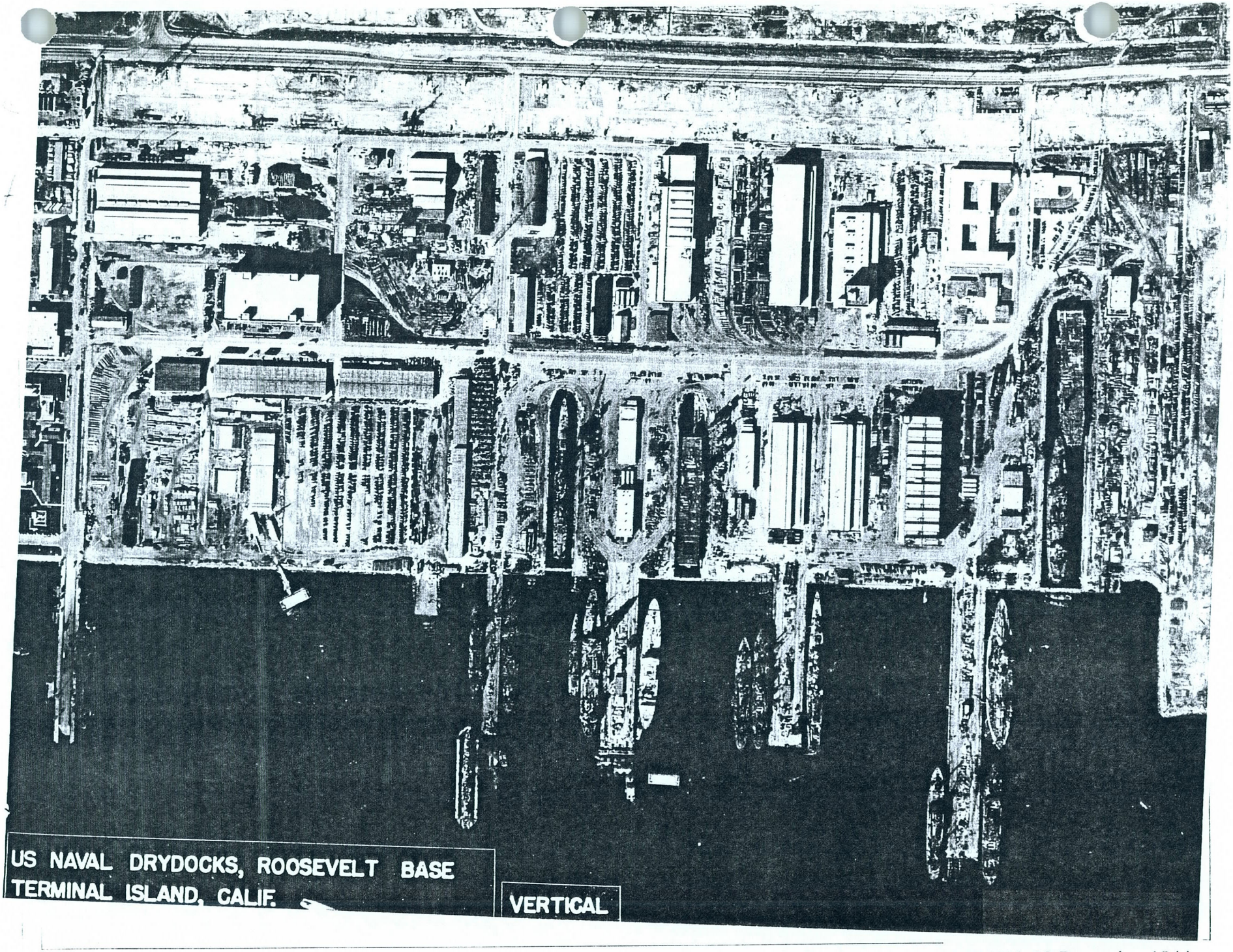
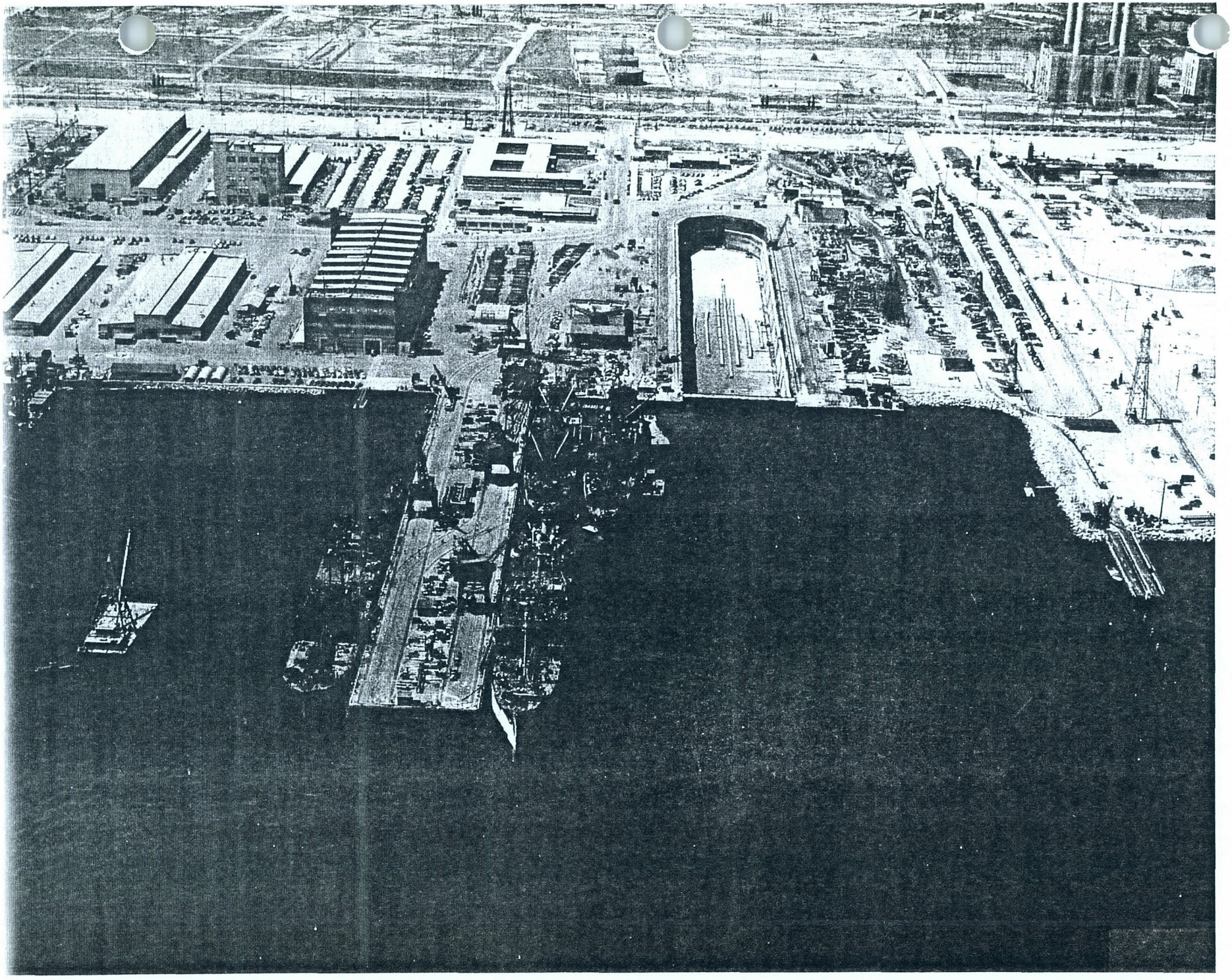
LBNSY Facing West, 12 December 1944

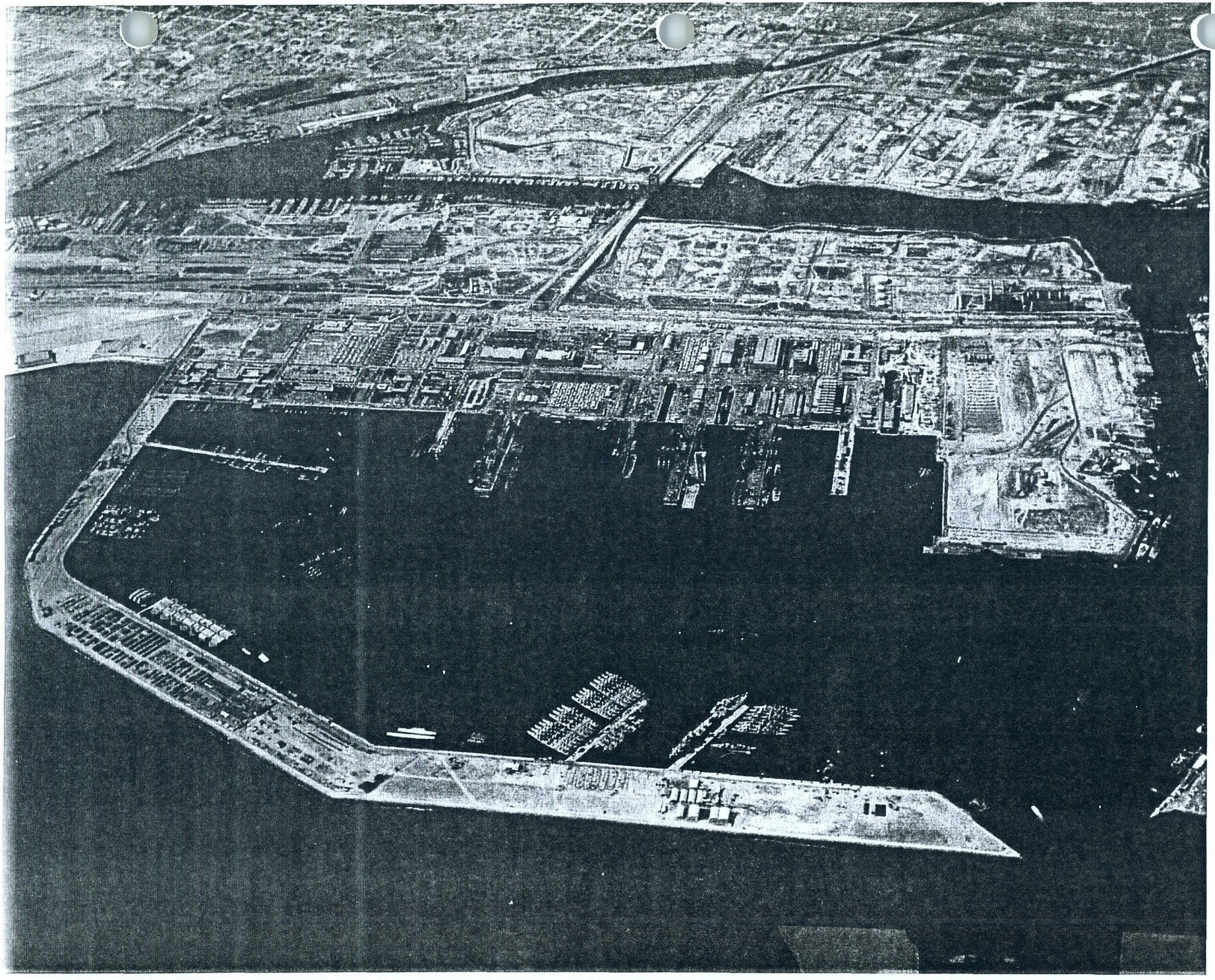


LBNSY, 28 December 1944

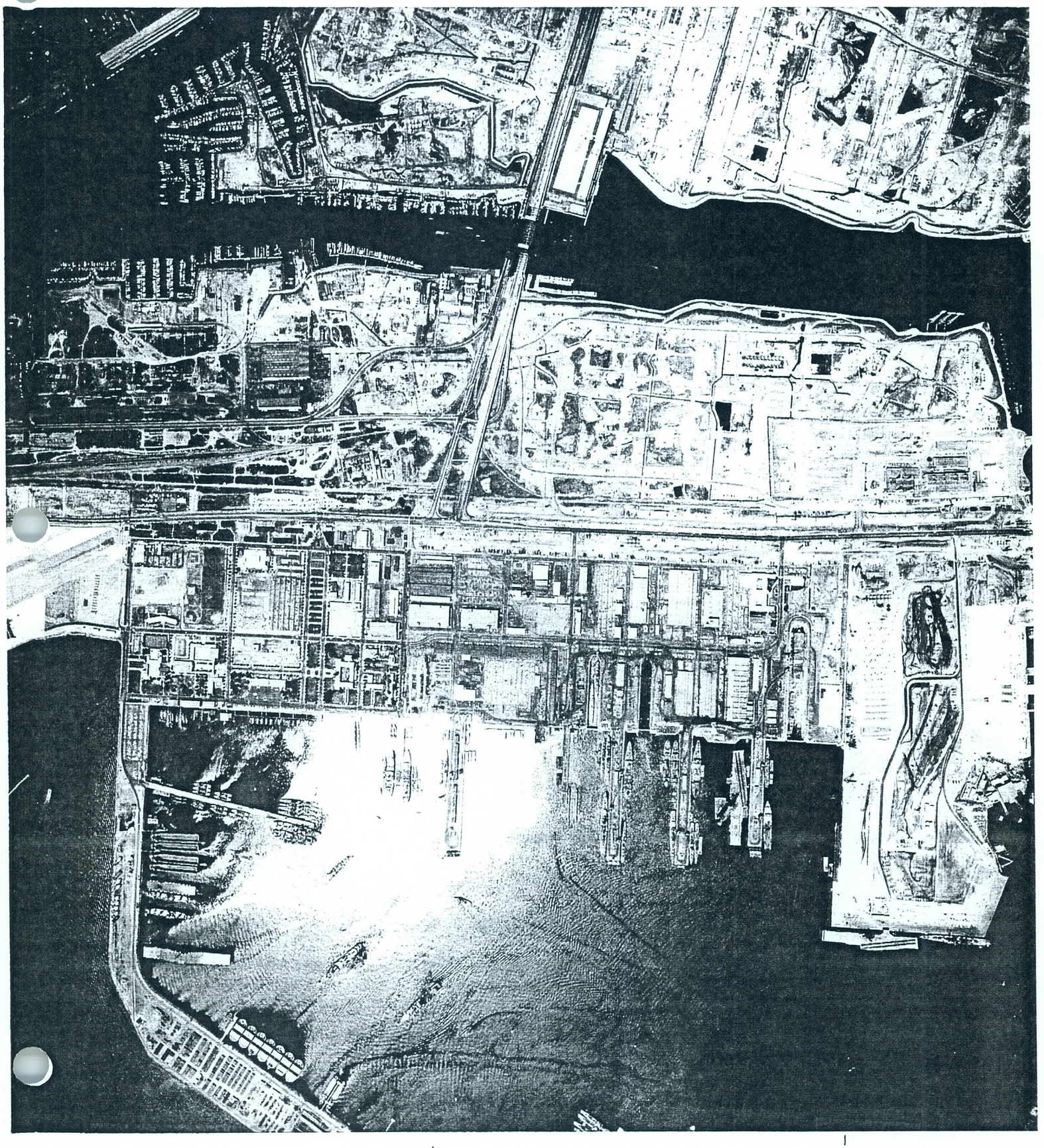
NOTES:



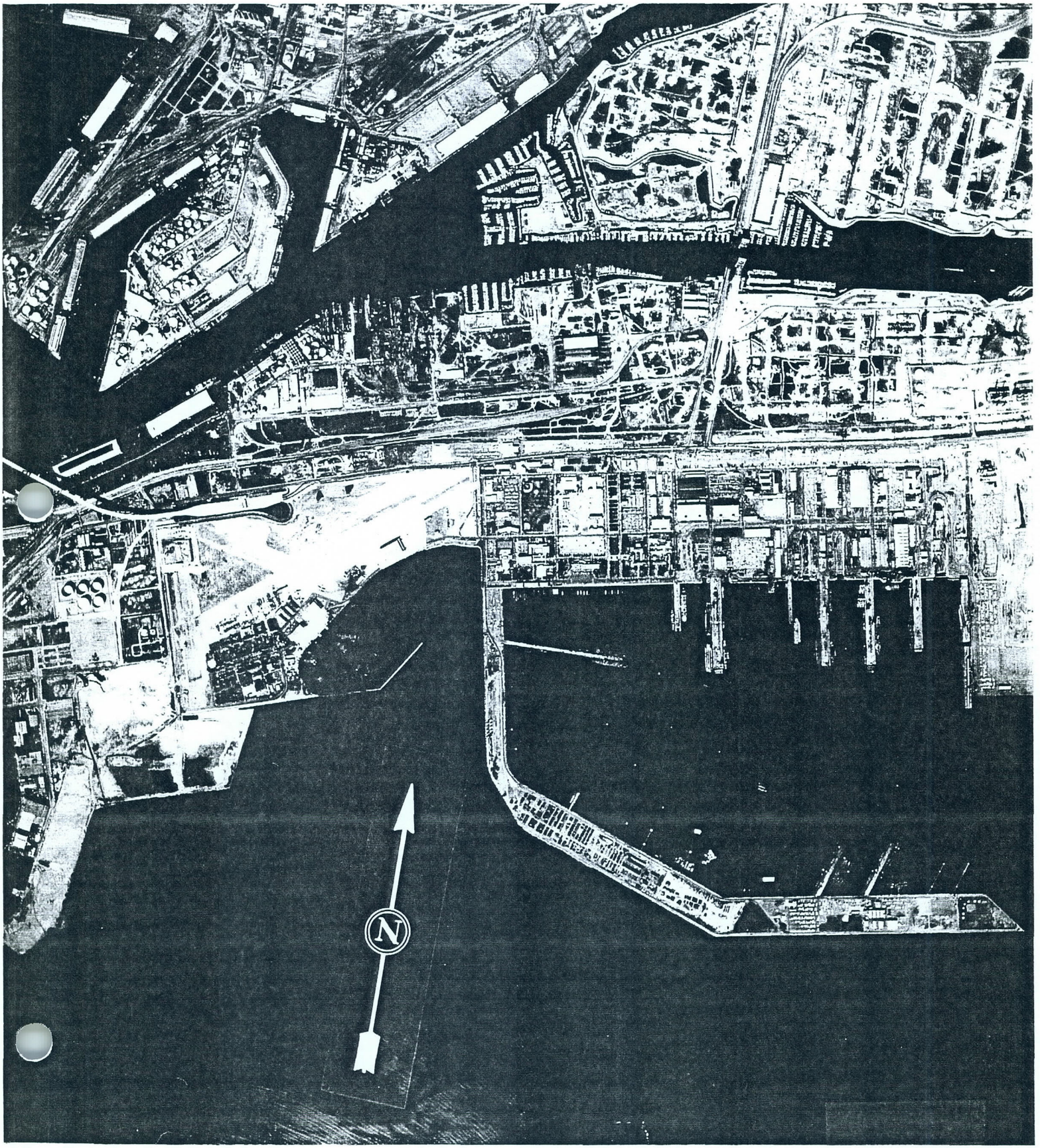
LBNSY Facing North, 14 May 1945



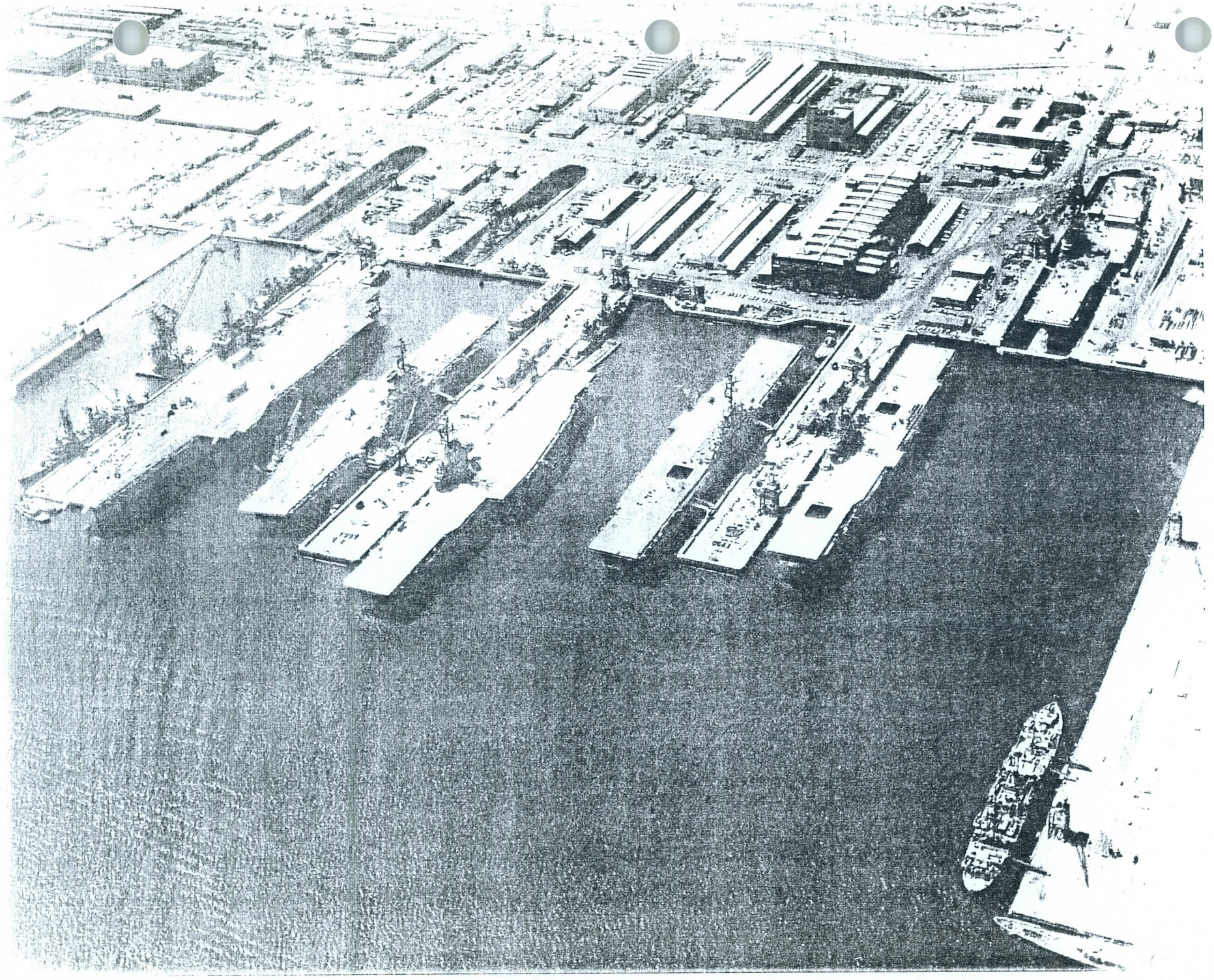
LBNC Facing North, 29 August 1958



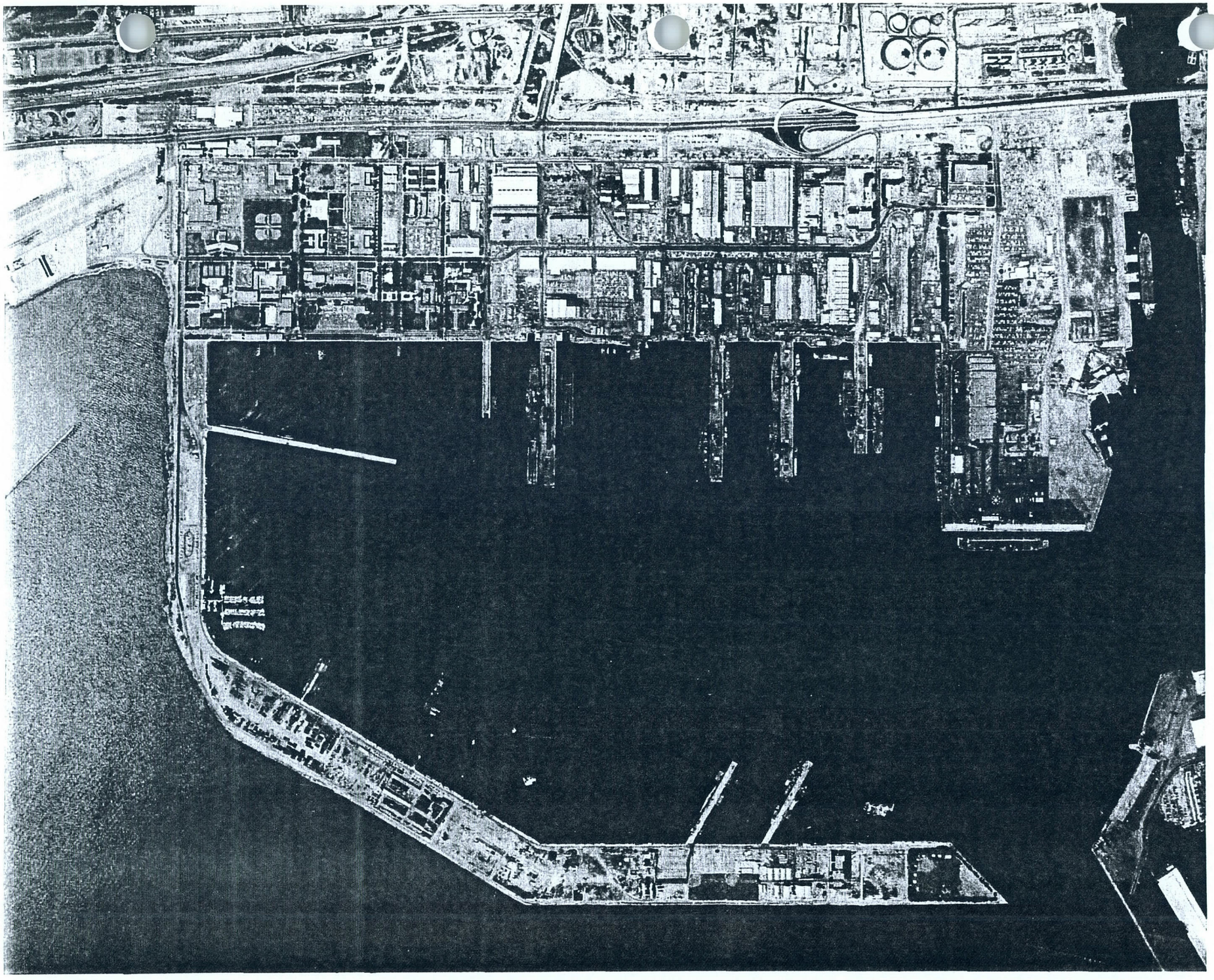
LBNC, 7 August 1960



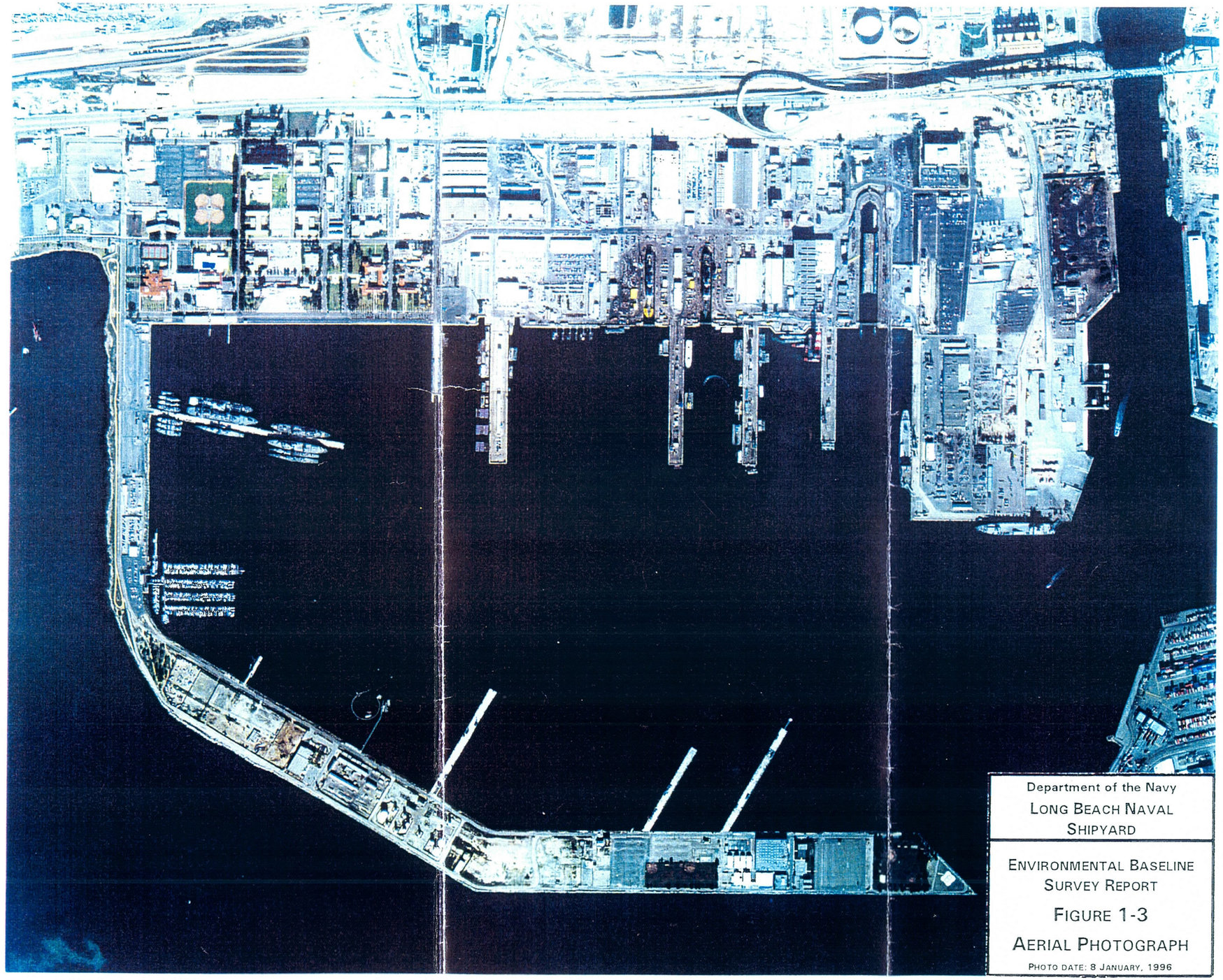
LBNC, 26 January 1966



LBNSY, 1960's



LBNSY, ~1980s



Department of the Navy
LONG BEACH NAVAL SHIPYARD

ENVIRONMENTAL BASELINE SURVEY REPORT

FIGURE 1-3

AERIAL PHOTOGRAPH

PHOTO DATE: 8 JANUARY, 1996

APPENDIX E

HISTORICAL MAPS

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Building 132 (East) Valve Cleaning and OWS Area (AOCs PT 4, IWS 5	June 1978
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MAP OF U. S. NAVAL DRYDOCKS TERMINAL ISLAND SAN PEDRO - CALIF.

SHOWING CONDITIONS ON

JUNE 30, 1944

SCALE IN FEET

RESTRICTED

FOR OFFICIAL USE ONLY

DATE OF SOUNDINGS: JUNE 30, 1942

35' DREDGED AREA

45' DREDGED CHANNEL

SOUNDINGS OF JULY 10, 1943

DATUM: M.L.L.W. = 00.00

HIGHEST TIDE OBSERVED	+7.5
MEAN HIGH WATER	+4.7
MEAN LOW WATER	+0.8
MEAN LOWER LOW WATER	+0.0
LOWEST TIDE OBSERVED	-2.9

BUILDINGS

NO.		CO ORD
50	NET STORAGE	M-21
51	ACETYLENE GENERATING PLANT #	N-15
52	TRANSMITTER	L-18
53	WAREHOUSE	K-18
54	TRANSPORTATION	N-15
100	PUBLIC WORKS SHOP	M-14
101	GARAGE	M-13
102	WOODWORKING & RIGGERS' SHOP	M-10
103	MECHANICS SERVICE	H-11
104	SUB STATION NO 3	G-11
106	SUB STATION NO 4	E-9
106	SUB STATION NO 5	F-13
107	SUB STATION NO 6	D-11
108	SERVICE BLDG	C-11
109	PAINT SHOP	H-9
110	PUBLIC WORKS OFFICE (SHOPS)	N-13
111	GATE HOUSE	O-14
112	DISPENSARY	L-13
113	CAFETERIA NO 2	K-10
128	PLATE SHOP	M-8
129	ELECTRIC SHOP & OPTICAL SHOP	M-7
130	SHEET METAL SHOP	G-8
131	PIPE & COPPER SHOP	G-7
132	MACHINE SHOP	J-8
133	PAINT & OIL STORAGE	K-8
134	SUB STATION NO 10	D-8
135	SERVICE BLDG	D-8
140	CAFETERIA	L-4
141	ADMINISTRATION	M-4
142	PERSONNEL	N-3
143	GATE HOUSE	R-3
144	REPRODUCTION BLDG	M-5
150	SUB STATION NO 1	L-2
151	SUB STATION NO 2 & SERVICE & OFFICE BLDG	G-4
152	SUB STATION NO 7	D-6
153	SERVICE BLDG	G-6
154	SERVICE BLDG	D-4
160	SCRAP BIN	N-1
161	SCRAP BIN BLDG	M-1
162	ACETYLENE GENERATING PLANT # 2	F-1

UNDERGROUND TANKS

NO	CO-ORD	USE	CAP. GAL.
351	M-2	FUEL OIL	10,000
352	G-11	FUEL OIL	10,000
353	L-6	FUEL OIL	500
354	H-10	FUEL OIL	6,666
355	H-9	FUEL OIL	1,974
356	M-18	ETHYL GASOLINE	10,000
357	L-15	DIESEL OIL	10,000
358	M-13	WHITE GASOLINE	1,015
359	M-13	ETHYL GASOLINE	4,634
360	M-13?	DIESEL OIL	2,134
361	M-13	KEROSENE	995
362	M-13	KEROSENE	994
363	L-2	TRANSFORMER OIL	2,000
364	L-2	TRANSFORMER OIL	2,000
365	L-2	SALT WATER SURGE	10,000
366	M-7	FUEL OIL	5,000

LEGEND

- EXISTING PERMANENT TRACKS (STD GAUGE)
- TRACKS UNDER CONSTRUCTION (STD GAUGE)
- EXISTING CRANE TRACKS
- CRANE TRACKS UNDER CONSTRUCTION
- EXISTING BUILDINGS
- BUILDINGS UNDER CONSTRUCTION
- STREET LIGHTS
- FIRE HYDRANTS
- CAPSTANS
- BUILDINGS AUTHORIZED
- EXISTING UNDERGROUND TANKS (300 SERIES NOS.)
- FIRE ALARM, BUILDING MOUNT
- FIRE ALARM, PEDESTAL MOUNT
- FIRE ALARM ON LIGHT STANDARD

LOCATION PLAN

PACIFIC OCEAN

LOS ANGELES

LONG BEACH

U.S. NAVAL DRYDOCKS TERMINAL ISLAND

SANTA ANA

ROSCOE

CORONA

ELSINORE

CAPTAIN, (C.E.C.) U.S. NAVY,
PUBLIC WORKS OFFICER
NAVAL OPERATING BASE

347

9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 4

HENRY FORD AVE. — TERMINAL ISLAND FREEWAY — SEASIDE BLVD. — PONTOON BRIDGE

LONG BEACH HARBOR DEPT.

GATE NO. 2 — GATE NO. 3 — GATE NO. 5A — GATE NO. 7

AVENUE D — AVENUE C — 13TH ST. — 9TH ST. — 8TH ST.

PARKING LOT NO. 1 — PARKING LOT NO. 2 — PARKING LOT NO. 3 — PARKING LOT NO. 4 — PARKING LOT NO. 6

SALVAGE YARD — TRANSMITTING ANTENNA AREA — OXY. SUPPLY STA.

LUMBER STORAGE — SMALL CRAFT MOORING — STUB PIER — NET PIER

STORM DRAIN PUMP PIT NO. 5 — DRY DOCK NO. 3 — STORM DRAIN PUMP PIT NO. 4 — DRY DOCK NO. 2 — DRY DOCK NO. 1

SALT WATER PUMP PIT NO. 1 — STORM DRAIN PUMP PIT NO. 3 — SALT WATER PUMP PIT NO. 2 — STORM DRAIN PUMP PIT NO. 2 — STORM DRAIN PUMP PIT NO. 1

QUAY WALL — SLUDGE PIT — OXYGEN SUPPLY STATION

BERTH 62 — BERTH 61 — BERTH 42 — BERTH 41 — BERTH 32 — BERTH 34 — BERTH 33 — BERTH 24 — BERTH 23 — BERTH 14 — BERTH 13 — BERTH 12 — BERTH 11

PIER — AFDL 42

U.S. BULKHEAD LINE — U.S. PIERHEAD LINE

LONG BEACH HARBOR DEPT. — ENTRANCE TO CERRITOS CHANNEL

PIER 'E'

NAVAL SHIPYARD — U.S. NAVAL STATION — LONG BEACH NAVAL SHIPYARD

AREA OF YARD — 159.48 ACRES (GOVERNMENT OWNED)
AREA OF MOLE — 104.92 " " "
TOTAL AREA — 264.40 " " "

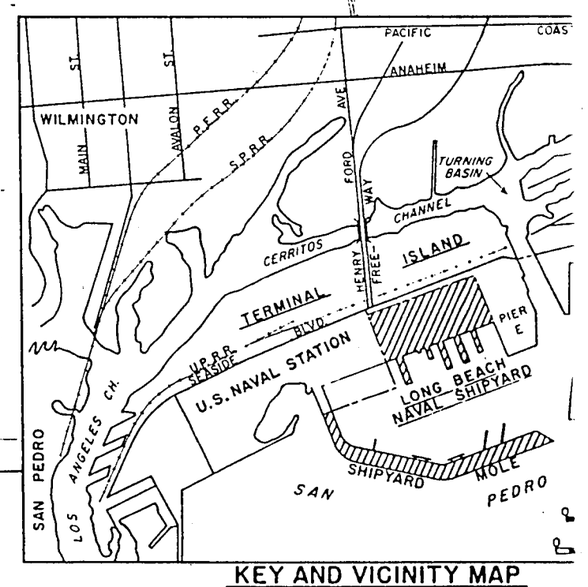
DATUM: M.L.L.W. = ELEV. 100.00
HIGHEST TIDE OBSERVED 107.54
MEAN HIGH WATER 104.71
MEAN LOW WATER 100.95
MEAN LOWER LOW WATER 100.00
LOWEST TIDE OBSERVED 97.44

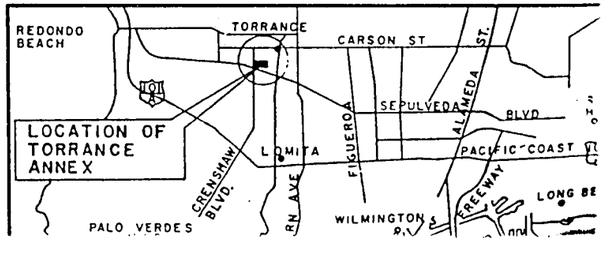
GRID NORTH (MAG. 1951) — N 15° 30' E TRUE — N 12° 16' 59" W

MOORING BUOYS — 3"

SCALE IN

KEY AND VICINITY MAP





	REVISED AS OF 25 OCTOBER 1956 / W.F.S.	10/26/56	Cpt'n
SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

P.W.O. DRAWING NO. 6101

DEPARTMENT OF THE NAVY — BUREAU OF YARDS & DOCKS
U.S. NAVAL BASE, LOS ANGELES
NAVAL SHIPYARD LONG BEACH, CALIF.

DRAWN W.F. Whitworth
CHECKED BY E.W. Wilkinson
SUPERVISOR J.E. Wilson
OFF. DES. ENG. W.A. Flood
ASST. SUPT.
PUBLIC WORKS OFFICER

MASTER SHORE STATION DEVELOPMENT PLAN

PART III SECTION 2

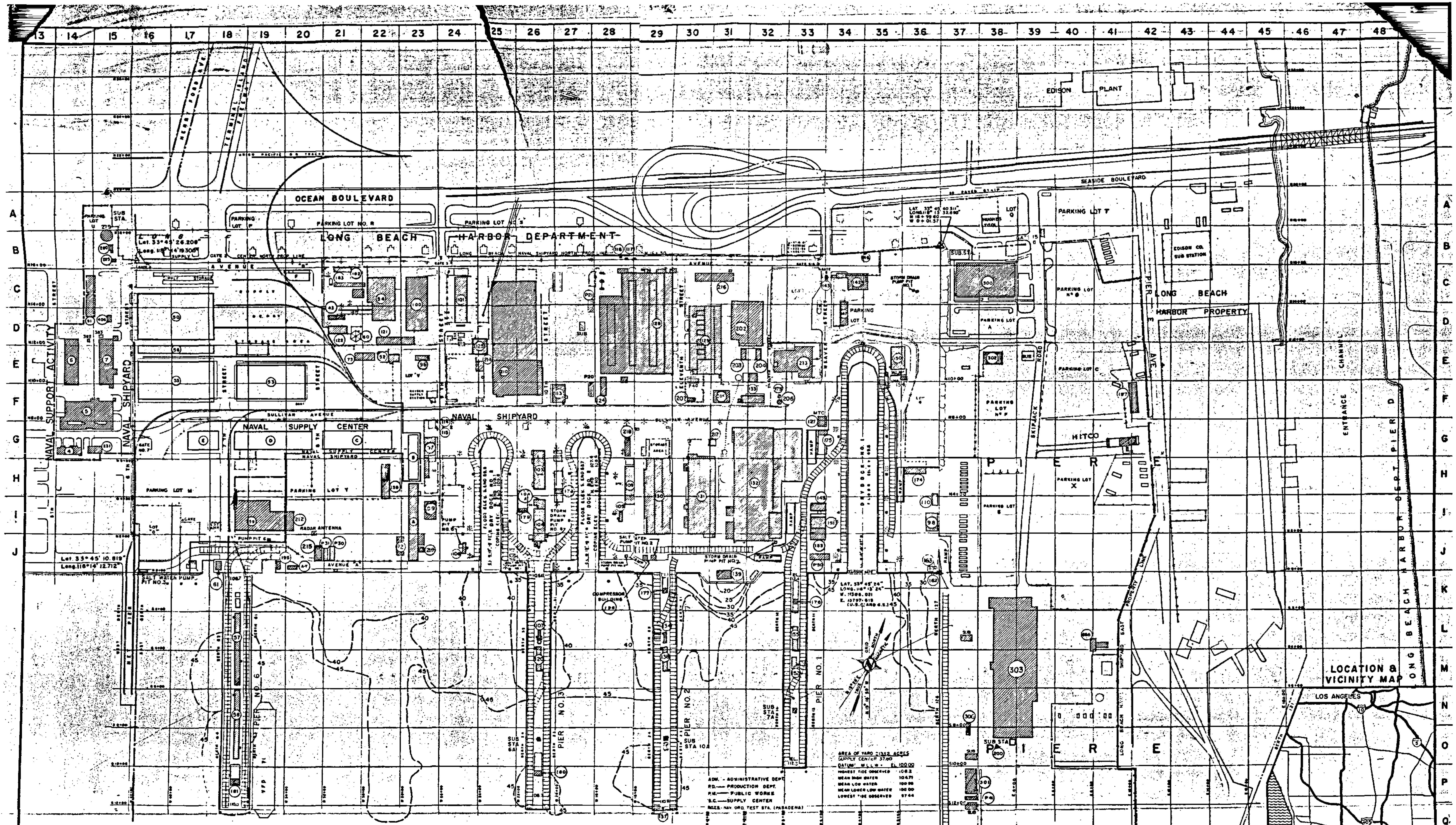
GENERAL DEVELOPMENT PLAN

KEY MAP

CONDITIONS AS OF 30 JUNE 1956

APPROVED 31 OCT. 1956 DATE
C.P.K. James
COMMANDING OFFICER

SCALE AS INDICATED
SHEET 2 OF 5
Y&D DWG. NO. 624,212



TEMPORARY BUILDINGS

NAVAL SHIPYARD

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
A	I-23	Multiple use-Shop 38-41	PD
P-21	D-36	SAND BLAST	PD
P-30	J-31	STORAGE	-
P-31	J-21	STORAGE	-
P-40	E-36	STORAGE	-
P-50	J-33	STORAGE	-
P-41	P 37	STORAGE	-
[illegible]	J-20	Shop 72, Gear shed	PD
P20	F 27		
P21	C 27		

UNDERGROUND TANKS

NO	LOCAT	USE	CAP-GAL
356	D-24	REGULAR GAS	15,000
357	D-24	ETHYL GAS	15,000
359	D-24	DIESEL OIL	15,000
361	D-24	KEROSENE	1,000
363	E-35	TRANFORMER OIL	2,000
364	E-35	TRANFORMER OIL	2,000
369	D-24	LUBE OIL	5,000
377	J-25	SALT WATER	12,000
378	H-28	PAINT THINNER	3,000
379	J-21	SMALL CRAFT FUEL	5,000
	D-31	LUBE OIL (4)	2,300

PERMANENT BUILDINGS AND STRUCTURES

NAVAL SHIPYARD

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
4	G-14	Heating Plant	PW
5	F 14	P.W. Offices & Shops	PW
6	E-14	Warehouse	PW
7	E-15	[illegible]	PW
43	D-21	Paint Spray Bldg	PW
50	D-17	Supply Warehouse	
52	E-22	Quality Assurance	PD
53	E-19	Warehouse & Core Proc.	PD
54	C-22	Transportation	PW
55	L-17	Supply Warehouse	SC
56	E-17	Warehouse	SC
57	L-16	Service Bldg	PD
58	N-1[illegible]		PD
59	J-2[illegible]	Warehouse	PW
60	D 21	Water Tank	PW
61	J-12	Cable Repair Facility	PD
72	J-22	Storage	PD
73	E-22	Transportation	PW
			PW
91	D-16	P.W. Storage	PW
96	E 23	Training	SY
97	[illegible] 23	Service Bldg	[illegible]

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
95	F-36	Service Bldg-Plastic Shop	PD
99	I-23	Asbestos Removal	PD
100	C-23	Training & Supply	
101	C-24	Storage	
103	H-26	Mechanics Service	PD
104	I-26	Sub Sta No 3	PW
104A	I-26	Shop 03	PW
105	I-28	Sub Sta No 4	PW
106	J-24	" 5	PW
107	L-26	" 6	PW
109	[illegible]	Shop	PD
110	I-3[illegible]	Shop 54 Storage	PD
113	F-27	Cafeteria No 2	ADM
114	G-24	Transformer House B	PW
115	G-24	Pump House B Sewer	PW
116	B-29	Transformer House F	PW
117	B-29	Pump House F Sewer	PW
120	M-26	Service Bldg	PD
121	D 22	Storage & Garage	PW
122	D-21	Shop 02 Industrial Gp	PW
124	F-28	Storage	PD

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
125	E-25	Electronic Equip Facility Bldg	PD
127	G-33	Metal Trades Council	
128	D-23	Shipfitter Shop	PD
129	D-33	Marine Machine Shop	PD
130	H-25	Sheet Metal Shop	PD
131	H-30	Pipe & Copper Shop	PD
132	H-32	Machine & Tool Shop	PD
133	F 32	Hydraulic Shop	PD
134	L-29	Sub Sta No 10	PW
137	P-29	Tide Gauge House	[illegible]
138	M-29	Service Bldg	PD
139	J-31	Safety Office	
142	C-34	Personnel-Employment	ADM
143	C-34	Gate House-Gate 5	
146	D-35	Chlorinator Bldg	PW
147	D-34	Industrial Relations	ADM
149	I-33	Service Bldg	PD
150	E-35	Sub Station No 1	PW
151	I-34	" " " 2	PW

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
152	M-33	Sub Station No 7	PW
153	J-33	Service Bldg	PD
154	E-36		PD
155	L-33	Service Gp [illegible] Center	PD
159	H-22	Shop 99	PD
160	B-35	Sand Blast Bldg	PD
161	D 36	Abrasive Blast	PD
162	J-36	Salt Water Pump Sta.	PW
173	E 38		
174	H-35	Radiac Bldg	PD
175	G-33	Material Shelter	"
176	K-33	" "	"
177	K-29	" "	"
178	H-27	" "	"
179	I-26	" "	"
180	P 36	" "	"
181	F-[illegible]	" "	"
182	C-21	" "	PW
183	C-21	" "	"
163	J-[illegible]	Chlorinator Bldg	"

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
195	J-19	Boat Dispatcher	PD
196	J-29	Compressor Bldg	PD
197	F-42	Instrument Calibration	PD
200	G-38	Collimation Tower	PD
			PD
202	D-21	Abrasive Blast	PD
203	E-31	Grit Blast	PD
204	E-12	Shot Blast	PD
205	F-31	Cleaning Bldg	PD
206	F-32	Sand Silo	PD
207	F-30	Waste Water Equip Station	PW
210	E-33	Electronic Weapons	PD
212	I-20	Storage	PD
213	E-23	Cafeteria No 1	ADM
214	E-25	Material Storage	PD
215	J-20	" "	PD
216	C-31	Plate Abrasive Blast	PD
217	G-31	Bustle Test Facility	PD
218	G-26		
219	J-23	Restrooms	

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
225	B-15	Transformer Sta.	PW
231	G-15	Power Sta.	PW
261			
279	A-15	Water Storage Tank	PW
280	B-15	Pumping Sta	PW
290	R-39	Storage	PW
300	C-38	Engineering Management	ADM
301	P-37	Service Bldg	PD
302	E-38	Power Plant	PW
303	M-39	Service Group Bldg	PD
304	N 37	Restrooms	
307	C 40	Chlorinator Bldg	
406	C 15	P.W. Holding Shop	PW
[illegible]	L-40	Hose Cleaning Facility	PD

FOR OFFICIAL USE ONLY MAP OF

LONG BEACH NAVAL SHIPYARD

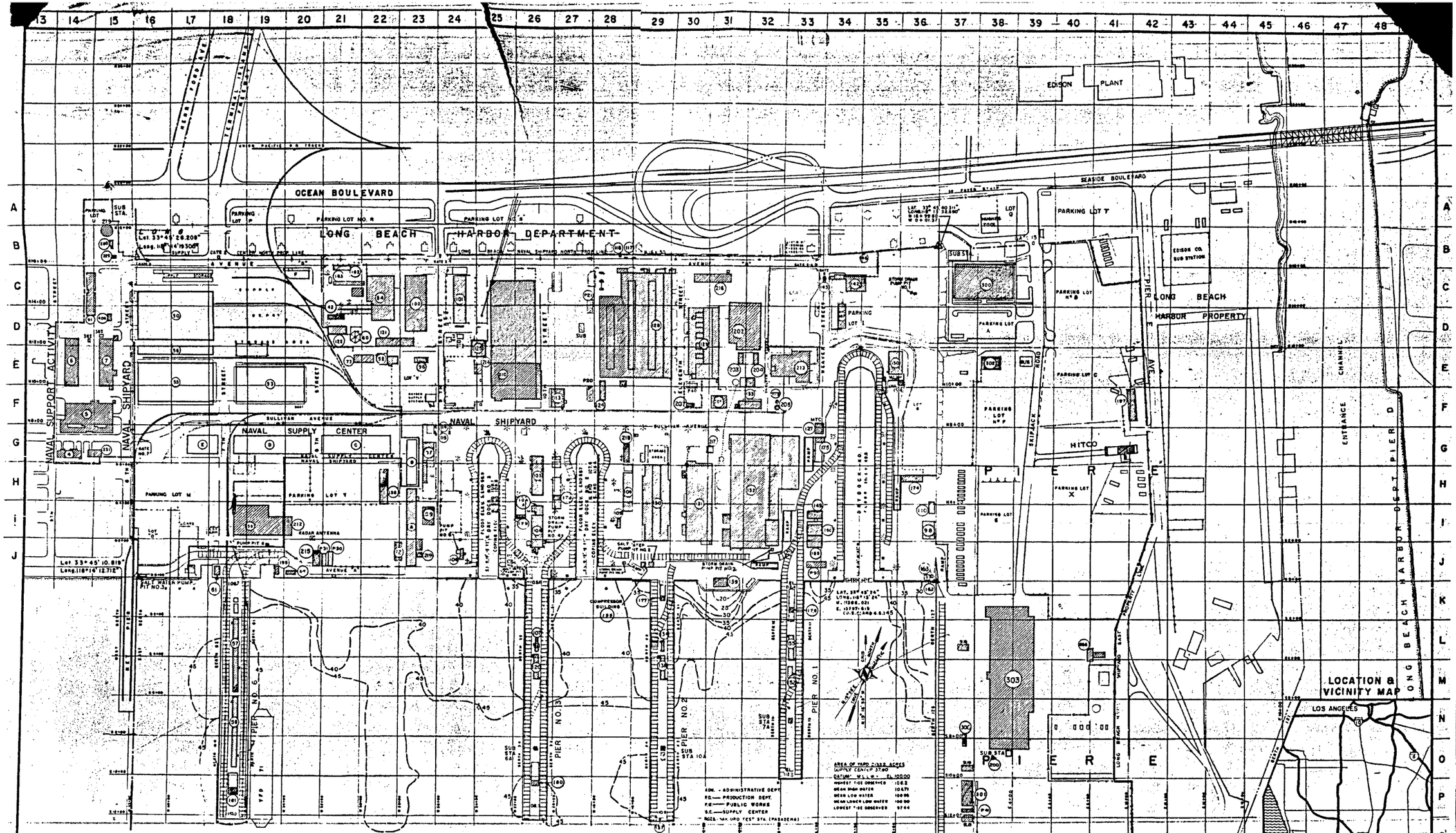
LONG BEACH, CALIFORNIA

100 0 200 400 600 800 1000

SCALE OF FEET

SHOWING CONDITIONS AS OF 26 FEBRUARY 1981

#10,451



TEMPORARY BUILDINGS

NAVAL SHIPYARD

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
A	I-23	Multiple use-Shop 38-41	PD
B	G-24	Sand Blast	PW
C	J-21	Storage	"
D	J-21	Storage	"
E	E-24	Storage	"
F	J-23	Storage	"
G	J-23	Storage	"
H	J-23	Shop 72, Gear and	PD
P21	F-27		
P31	G-27		

UNDERGROUND TANKS

NO	LOCAT	USE	CAP-GAL
356	C-24	REGULAR GAS	15,000
357	C-24	ETHYL GAS	15,000
359	D-24	DIESEL OIL	15,000
361	D-24	KEROSENE	1,000
363	E-25	TRANFORMER OIL	1,000
364	E-25	TRANFORMER OIL	2,000
365	E-24	LUBE OIL	1,000
377	J-25	SALT WATER	12,000
378	H-25	PAINT THINNER	3,000
379	J-21	SMALL CRAFT FUEL	5,000
	D-31	LUBE OIL (4)	2,300

PERMANENT BUILDINGS AND STRUCTURES

NAVAL SHIPYARD

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
4	D-18	Heating Plant	PW
5	E-18	Pipe Vault & Shops	PW
6	E-18	Warehouse	PW
7	E-18	Transformer Vault	"
43	G-21	Paint Spray Bldg	PW
50	D-17	Supply Warehouse	"
52	E-22	Quality Assurance	PD
53	E-19	Warehouse & Core Prep	"
54	C-22	Transportation	PW
55	L-17	Supply Warehouse	"
56	L-17	Warehouse	"
57	L-17	Service Bldg	PD
58	N-21	Warehouse	PD
59	N-21	Shop 56 Storage	PD
60	D-21	Water Tank	PW
61	J-19	Crane Repair Facility	PD
72	J-22	Storage	PD
73	E-22	Transportation	PW
91	D-24	Paint Storage	PW
96	E-23	Training	ST
97	F-23	Service Bldg	PD
101	H-26	Mechanics Service	PW
104	I-26	Sub Sta No 5	PW
104A	I-26	Shop 03	PW
105	I-28	Sub Sta No 9	PW
106	J-24	" 9	PW
107	L-26	" 6	PW
108		Shop	PD
110	I-30	Shop 56 Storage	PD
113	F-27	Cafeteria No 4	ALM
114	G-24	Transformer House B	PW
115	G-24	Pump House & Sewer	PW
116	B-29	Transformer House F	PW
117	B-28	Pump House F Sewer	PW
120	M-26	Service Bldg	PD
121	N-26	Storage & Garage	PW
122	O-26	Shop 62 Industrial Gp	PW
124	P-28	Storage	PD
125	P-30	Service Bldg-Plastic Shop	PD
126	Removed		
127	Removed		
128	Removed		
129	D-23	Marine Machine Shop	PW
130	H-26	Sheet Metal Shop	PW
131	H-20	Pipe & Copper Shop	PD
132	H-24	Abrasive Blast	PD
133	I-24	Shop 03	PW
134	L-29	Sub Sta No 10	PW
135			
136			
137	P-29	Tide Guard House	PW
138	M-29	Service Bldg	PD
139	J-31	Safety Office	PW
142	C-34	Personnel-Employment	ALM
143	C-34	Gate House-Gate 5	PW
144	D-34	Gate House-Gate 6	PW
145	D-34	Laboratory Bldg	PW
147	D-34	Industrial Relations	ALM
148	D-34	Service Bldg	PD
149	I-33	Service Bldg	PD
150	E-34	Sub Station No 11	PW
151	I-33	" 2	PW
152	M-33	Sub Station No 7	PW
153	J-33	Service Bldg	PD
154	E-36	Shop	PD
155	L-33	Abrasive Blast	PD
157	H-24	Sand Blast Bldg	PD
160	B-33	Abrasive Blast	PD
161	D-36	Hydraulic & Tool Shop	PD
162	J-31	Salt Water Pump Bldg	PW
163	E-33		
164	M-35	Public Bldg	PD
165		Material Shelter	"
166			"
167			"
168			"
169			"
170			"
171			"
172			"
173			"
174			"
175			"
176			"
177			"
178			"
179			"
180			"
181			"
182			"
183			"
184		Underwater Bldg	
185			

LONG BEACH HARBOR PROPERTY

NO	LOCATION	ASSIGNMENT	OCCUPIED BY
195	J-19	Boat Dispatcher	PD
196	J-29	Compressor Bldg	PD
197	P-42	Instrument Calibration	PD
200	J-38	Collimation Tower	PC
201	E-31	Grit Blast	PC
202	D-31	Abrasive Blast	PD
204	F-32	Sand Silo	PD
205	F-31	Cleaning Bldg	PD
206	F-32	Sand Silo	PD
207	F-30	Water Meter Equip Station	PW
208	E-33	Electronic Welcome	PD
209	I-20	Storage	PD
210	E-33	Cafeteria No 1	ADM
211	E-28	Material Storage	PD
212	I-20	"	PD
213	C-31	Photo Abrasive Blast	PD
214	G-31	Bursting Test Facility	PD
215	G-26		
216	J-29	Restrooms	
217			
218			
219			
220			
221			
222			
223			
224			
225	B-15	Transformer Sta	PW
231	G-15	Power Str.	PW
261			
279	A-19	Water Storage Tank	PW
280	B-15	Pumping Sta	PW
290	R-39	Sludge	PW
300		Engineering Measurement	ADM
301	P-27	Service Bldg	PD
302	G-24	Power Plant	PW
303	N-38	Service Group Bldg	PD
304	N-37	Restrooms	
305	P-20	Chlorinator Bldg	
306	G-15	Pilot Housing Bldg	PW
406	L-40	Hose Cleaning Facility	PD

FOR OFFICIAL USE ONLY MAP OF

LONG BEACH NAVAL SHIPYARD

LONG BEACH, CALIFORNIA

100 0 200 400 600 800 1000

SCALE OF FEET

SHOWING CONDITIONS AS OF 26 FEBRUARY 1981

M 10,451

SEASIDE BOULEVARD

LONG BEACH HARBOR DEPARTMENT

LONG BEACH NAVAL SHIPYARD NORTH PROPERTY LINE 16+50

NAVAL SUPPLY CENTER

U.S. NAVAL STATION

LONG BEACH HARBOR DEPT.

NAVY PROPERTY

TANK FARMS

OIL WELLS

TANK FARM

TERMINAL ISLAND TRANSIT COMPANY (LEASE)

SULLIVAN AVENUE

AVENUE D

AVENUE A

AVENUE C

GATE 1 GATE 2 GATE 3 GATE 5 GATE 6 GATE 7 GATE 8 GATE 11

PARKING AREA

PARKING LOT NO 1 PARKING LOT NO 2 PARKING LOT NO 3 PARKING LOT NO 4 PARKING LOT NO 5 PARKING LOT NO 6

UNDERGROUND TANK FARM

OXYGEN SUPPLY STATION

STORM DRAIN PUMP PIT NO 1 STORM DRAIN PUMP PIT NO 2 STORM DRAIN PUMP PIT NO 3 STORM DRAIN PUMP PIT NO 4 STORM DRAIN PUMP PIT NO 5

SALT WATER PUMP PIT NO 1 SALT WATER PUMP PIT NO 2

ROTARY COMPRESSOR BUILDING

FLOOD LIGHT TOWER NO 1

FLT NO 2

SANDBLAST AREA A

WATER INJECTION PLANT

STIFFLEG DERRICK

SMALL CRAFT MOORING

PIER "E"

NAVY PROPERTY

STORAGE BLDG

HUGHES TOOL CO AIRCRAFT DIVISION LEASE

RICHFIELD OIL COMPANY LEASE

LONG BEACH NAVAL SHIPYARD

BERTH 124 BERTH 123 BERTH 127 BERTH 126 BERTH 21 BERTH 22 BERTH 23 BERTH 24 BERTH 25 BERTH 26 BERTH 27 BERTH 28 BERTH 29 BERTH 30 BERTH 31 BERTH 32 BERTH 33 BERTH 34 BERTH 35 BERTH 61 BERTH 62 BERTH 63 BERTH 64 BERTH 65

LAT 33° 45' 26.206" LONG 118° 14' 19.300"

LAT 33° 45' 10.819" LONG 118° 14' 12.717"

LAT 33° 45' 40.31" LONG 118° 13' 32.680"

LAT 33° 45' 28.84" N LONG 118° 13' 32.93" W

LAT 33° 45' 24" LONG 118° 13' 26"

LEGEND

	EXISTING TO BE RETAINED	EXISTING TO BE REMOVED	PLANNED PEACETIME
BUILDINGS & STRUCTURES			
ROADS, WALKS & PAVED AREAS			
RAILROADS			
CRANE TRACKS			
NAVY PROPERTY BOUNDARY WITHOUT FENCE			
NAVY PROPERTY BOUNDARY WITH FENCE			
FENCE			
SUBSIDENCE REMEDIAL BOUNDARY			
MAIN STATION ENTRANCE			

NOTES

DATUM IS ... (GOVERNMENT DANES)

MEAN HIGH WATER ...

MEAN LOW WATER ...

KEY & VICINITY MAP

NO SCALE

DRYDOCK TIDAL ELEVATIONS

	DD 1	DD 2	DD 3
SILL SEAT	57.74	67.21	67.08
TOP OF SILLS	60.45	68.96	68.97
FLOOR ELEVATION SOUTH END	49.52	58.64	58.48
TOP OF DOCK SOUTH END	116.98	114.80	114.53
TOP OF DOCK WALL SOUTH END	112.41	108.55	108.69
TOP OF DOCK WALL NORTH END	111.73	107.57	108.05

NOTE ELEVATIONS AS OF AUG 1965

GRAPHIC SCALE 1"=100'

4	CORR	UPDATED TO REFLECT EXISTING CONDITIONS AS OF 15 NOV 1965	12/1/65	RDS
NO	SYMBOL OR NO	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE	APPD APPROVAL

DESIGN ELOISE M. HIGGINS

DRAWN SUPV

CHF ENG DIV

PROJ ENG

CONCUR

APPROVED BY BUDOCKS

DEPARTMENT OF THE NAVY BUREAU OF YARDS & DOCKS

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIF.
GENERAL DEVELOPMENT MAP
EXISTING & PLANNED PRE M-DAY MAIN AREA

SCALE GRAPHIC

SHEET 3 OF 3

B. W. N. 570404

SUBMITTED BY DIRECTION

Bruce Davis 8/1/65

DATE

57*	L-18	SERVICE BLDG.	15,000	SF
57*	L-18	CIVILIAN CAFETERIA	6,720	SF
58	N-18	SERVICE BLDG.	21,300	SF
60	D-21	WATER STORAGE TANK (POTABLE)	200,000	GA
61	J-18	CABLE REPAIR BLDG.	1,662	SF
62	D-23	RADIO ANTENNA TOWER	LS	
63	K-22	DERRICK BLDG.	168	SF
96	C-30	DEGAUSSING BLDG.	1,680	SF
97	E-26	SERVICE BLDG.	8,204	SF
98	D-26	SERVICE BLDG.	9,280	SF
99*	F-26	OPTICAL SHOP	800	SF
99*	F-26	SERVICE BLDG.	5,200	SF
100*	C-23	P.W. SHOPS	31,821	SF
100*	C-23	P.W. SHOP ADMINISTRATION BLDG.	9,699	SF
101*	C-24	GARAGE, REPAIR	5,422	SF
101*	C-24	INDUSTRIAL WAREHOUSE	11,765	SF
102	D-27	WOODWKG & RIGGERS SHOP BLDG.	117,443	SF
103	H-26	MECHANICS SERVICE BLDG.	15,706	SF
104*	I-26	COMPRESSED AIR PLANT	4,617	SF
104*	I-26	ELECTRIC SUB STATION NO. 3	3,597	SF
104*	I-26	STEAM GENERATING PLANT	2,636	SF
104A	I-26	UTILITIES OFFICE BLDG.	3,000	SF
105	I-28	ELECTRIC SUB STATION NO. 4	1,275	SF
106	J-24	ELECTRIC SUB STATION NO. 5	352	SF
107	L-26	ELECTRIC SUB STATION NO. 6	750	SF
109	H-28	PAINT SHOP BLDG.	15,370	SF
110	C-26	WAREHOUSE	1,950	SF
111	B-23	SENTRY SHACK	392	SF
112*	E-24	DISPENSARY BLDG.	8,568	SF
112*	E-24	SUPV. SHIPBUILDING OFFICE	8,568	SF
113	F-27	CIVILIAN CAFETERIA	6,664	SF
114	G-24	TRANSFORMER VAULT "B"	88	SF
115	G-24	SEWER PUMP HOUSE "B"	176	SF
116	B-28	TRANSFORMER VAULT "F"	88	SF
117	B-28	SEWER PUMP HOUSE "F"	270	SF
118	I-28	DIESEL REPAIR SHOP BLDG.	5,202	SF
119	J-26	RIGGERS STORAGE BLDG	289	SF
120	M-26	SERVICE BLDG. - PIER 3	6,448	SF
121	D-22	WAREHOUSE	9,040	SF
122	D-21	SHOP C2 - INDUSTRIAL SHOP BLDG.	4,040	SF
124	F-28	STORAGE BLDG.	2,758	SF
125	C-30	SHIPS EQUIPMENT LAYDOWN BLDG.	3,150	SF
128	D-29	STEEL SHOP BLDG.	145,084	SF
129	D-30	ELECTRIC SHOP BLDG.	111,912	SF
130	H-29	SHEETMETAL SHOP BLDG.	56,370	SF
131	H-30	PIPE & COPPER SHOP BLDG.	61,612	SF
132*	H-32	STORAGE	3,060	SF
132*	H-32	MACHINE SHOP BLDG.	335,514	SF
133	F-37	HYDRAULIC SHOP BLDG.	4,800	SF
134	I-2[illegible]	ELECTRIC SUB STATION NO. 10	[illegible]40	SF
13[illegible]	G-3[illegible]	SHOP STORES BLDG.	15,[illegible]1	SF
137	F-23	TIDE GAUGE HOUSE, PIER 2	80	SF
138	M-29	SERVICE BLDG., PIER 2	6,448	SF
139*	J-31	MISSILE RESEARCH SHOP	1,860	SF
139*	J-31	ADMINISTRATION BLDG.	1,380	SF
140	E-33	CIVILIAN CAFETERIA	26,064	SF
141	D-32	ADMINISTRATION BLDG.	102,136	SF
142	C-34	PERSONNEL OFFICE BLDG.	11,308	SF
143	C-34	SENTRY SHACK	174	SF
144	D-32	PRINT SHOP BLDG.	4,068	SF
145	F-33	INDMAN OFFICE BLDG.	7,017	SF
146	B-35	CHLORINATOR BLDG.	140	SF
147	D-34	ADMINISTRATION BLDG.	4,960	SF
148	J-30	MISSILE SHELTER	768	SF
149	I-33	SERVICE BLDG.	9,300	SF
150*	E-35	ELECTRIC SUB STATION NO. 1	6,000	SF
150*	E-35	STEAM GENERATING PLANT	3,000	SF
150*	E-35	COMPRESSED AIR PLANT	3,000	SF
151	I-33	ELECTRIC SUB STATION NO. 2	7,500	SF
152	M-33	ELECTRIC SUB STATION NO. 7	1,248	SF
153*	J-33	SERVICE BLDG. (OFFICES)	5,250	SF
153*	J-33	SERVICE BLDG. (SHOP)	3,000	SF
155	L-33	SERVICE BLDG.	6,448	SF
158	H-22	SHOP [illegible] WAREHOUSE	4,000	SF
160	C-36	SANDBLAST WORK AREA	LS	
161*	D-36	FORCES AFLOAT ADMINISTRATION	824	SF
161*	D-36	FORCES AFLOAT STORAGE BLDG.	3,290	SF
166	D-36	PRESERVATION BLDG.	1,000	SF
170	G-36	SANDBLAST BLDG.	1,302	SF
171	D-30	SANDBLAST BLDG. NO. 2	364	SF
172	G-36	PAINT SPRAY BLDG.	493	SF
173	F-36	SAND SILO	LS	
174	H-36	RADIAC BLDG.	3,540	SF
178	J-20	FIELD OFFICE BLDG.	80	SF
179	J-20	FIELD OFFICE BLDG.	540	SF
351	E-30	FUEL OIL TANK	10,000	GA
352	I-26	FUEL OIL TANK	LS	
356	D-24	REGULAR GAS TANK	10,000	GA
357	D-24	ETHYL GAS TANK	10,000	GA
358	D-24	WHITE GAS TANK	1,013	GA
359	D-24	DIESEL OIL TANK	2,631	GA
360	D-24	DIESEL FUEL TANK	2,631	GA
361	D-24	KEROSENE TANK	991	GA
362	D-24	KEROSENE TANK	991	GA
363	E-35	TRANSFORMER OIL TANK	2,000	GA
364	E-35	TRANSFORMER OIL TANK	2,000	GA
365	E-35	BOILER FEED WATER TANK	LS	
366	F-20	FUEL OIL TANK	3,000	GA
369	D-24	LUBE OIL TANK	720	GA
370	D-24	LUBE OIL TANK	720	GA
371	D-24	LUBE OIL TANK	720	GA
372	D-24	LUBE OIL TANK	720	GA
373	D-24	LUBE OIL TANK	LS	

PIERS

PIER NO. 1	K-33	REPAIR PIER	2,015	FB
PIER NO. 2	K-29	REPAIR PIER	2,444	FB
PIER NO. 3	K-27	REPAIR PIER	2,444	FB
PIER NO. 4	K-24	REPAIR PIER	1,204	FB
PIER NO. 6	K-26	REPAIR PIER	2,444	FB

DRYDOCKS

DD NO.1	J-35	DRYDOCK (CVA)	169,260	SF
DD NO.2	J-27	DRYDOCK (CA)	67,914	SF
DD NO.3	J-25	DRYDOCK (CA)	67,914	SF

TEMPORARY BUILDINGS, STRUCTURES & PORTABLE BUILDINGS

A*	I-23	SHIP REPAIR SHOP	19,150	SF
A*	I-23	OFFICE BLDG.	1,250	SF
A-P	H-22	WAREHOUSE, WELDERS	1,500	SF
A-T	E-24	ADMINISTRATION BLDG.	1,500	SF
A-V	D-23	SHOP 07, WAREHOUSE	1,350	SF
A-W	C-31	SHOP 51, STORES BLDG.	3,600	SF
A-X	C-31	STORAGE BLDG.	3,600	SF
A-Y	J-20	SHOP 72, GEAR SHED	700	SF
B-G	D-23	SHOP 07, WAREHOUSE	1,350	SF
B-16***SEAL BEACH		ELECTRIC MAINT. SHOP	360	SF
SDP-1	C-36	STORM DRAIN PUMP PIT	LS	
SDP-2	J-32	STORM DRAIN PUMP PIT	LS	
SDP-3	J-28	STORM DRAIN PUMP PIT	LS	
SDP-6	J-19	STORM DRAIN PUMP PIT	LS	
SWP-1	J-25	SALT WATER PUMP PIT NO. 1	783	SF
SWP-2	J-21	SALT WATER PUMP PIT NO. 2	783	SF
W-8***SEAL BEACH		UNDERWATER DETECTION STATION	2,000	SF
W-8A**SEAL BEACH		POWER BLDG.	200	SF
W-8B**SEAL BEACH		RADAR TOWER	LS	
W-8C**SEAL BEACH		RADAR TOWER	LS	
W-9**LONG BEACH		SHORAN TOWER	LS	
W-9A**LONG BEACH		EQUIPMENT SHELTER	100	
400214	NA	QUAY WALLS	2,207	LF
400215**	NA	SECURITY FENCING & WALLS	8,925	LF
400216**	NA	SECURITY FENCING & WALLS	10,116	LF
400217**	C-33	FLAG POLE	LS	
400218**	NA	SIDEWALKS	2,742	LF
400219**	NA	RAILROAD TRACKAGE	4.5	MI
400222**	NA	ROADS	5.0	MI
400223**	NA	PARKING AREA	60,354	SY
400224**	NA	OPEN STORAGE AREA-BULK (CONCRETE)	1,668	SY
400225**	NA	SEA WALL	1,570	LF
400228**	H-36	LIGHT TOWER NO. 2	LS	
400229**	F-30	LIGHT TOWER NO. 3	LS	
400230**	NA	OPEN STORAGE AREA-BULK (BITUMINOUS)	57,016	SY
400231**	D-36	SEPTIC TANK	350	GA
400233**	NA	OPEN STORAGE AREA-BULK (OTHER)	38,971	SY
400234**	NA	MOORING DOLPHINS	536	PI
400237**	I-20	RADAR CHECK-OUT TOWER	LS	
403146**	NA	SENTRY SHACK	30	SF
403147**	NA	SENTRY SHACK	35	SF
404090**	NA	WATER DISTRIBUTION SYSTEM	85,411	LF
404091**	NA	STEAM DISTRIBUTION SYSTEM	27,679	LF
404093**	NA	STORM DRAINAGE SYSTEM	40,840	LF
404094**	NA	OXYGEN DISTRIBUTION SYSTEM	35,660	LF
404095**	NA	COMPRESSED AIR SYSTEM	38,079	LF
404096**	NA	ACETYLENE DIST. SYSTEM	36,425	LF
404097**	NA	GAS PIPE LINE	18,050	LF
404098**	NA	SANITARY SEWERS	22,475	LF
404237**	NA	PORTABLE HEAD	48	SF
404248**	F-27	CLOCKING STATION	340	SF
404250**	NA	PORTABLE HEAD	54	SF
404251**	NA	PORTABLE OFFICE BLDG.	20	SF
404252**	J-20	CLOCKING STATION	240	SF
404253**	H-23	CLOCKING STATION	280	SF
404268**	F-27	CLOCKING STATION	360	SF
404271**	F-27	CLOCKING STATION	360	SF
404272**	F-27	CLOCKING STATION	360	SF
404274**	D-30	PLATING TANK SHELTER	483	SF
404278**	H-28	ACID TANK SHELTER	1,032	SF
404279**	J-20	CLOCKING STATION	240	SF
404284**	NA	PORT. OFFICE BLDG.	25	SF
404268**	NA	PORT. HEAD	54	SF
404290**	NA	PORT. GALLEY NO. 1	220	SF
404292**	NA	PORT. HEAD	56	SF
404293**	NA	PORT. HEAD	40	SF
404297**	G-30	LAUNDRY PICK-UP BLDG.	192	SF
404314**	H-18	STORAGE BLDG.	96	SF
404317**	NA	PORT. GALLEY NO. 2	220	SF
404318**	NA	PORT. GALLEY NO. 3	220	SF
404324**	NA	SENTRY SHACK	25	SF
404325**	NA	PORT. HEAD	78	SF
404326**	NA	PORT. GALLEY NO. 4	220	SF
404327**	NA	PORT. GALLEY NO. 5	220	SF
404646**	E-20	L-E GEAR ROOM BLDG.	60	SF
404654**	C-30	CLOCKING STATION	360	SF
404669**	E-31	SHOP 51, SHOP STORES OFFICE	112	SF
404673**	NA	SENTRY SHACK	35	SF
405764**	C-35	STORAGE BLDG.	216	SF
406378**	NA	COMM. LINES. TELEPHONE	5.55	MI
406457**	K-23	FLAMMABLE STORAGE BLDG.	60	SF
406465**	NA	SENTRY SHACK	25	SF
406605**	NA	COMMUNICATION LINES	6.6	MI
407418**	NA	SENTRY SHACK	20	SF
407421**	NA	ADMINISTRATION BLDG.	192	SF
407427**	NA	PORTABLE OFFICE BLDG.	192	SF
407429**	NA	SENTRY SHACK	20	SF
407430**	NA	PORT. FIELD OFFICE BLDG.	192	SF
407431**	NA	ADMINISTRATION BLDG.	192	SF
407433**	NA	ADMINISTRATION BLDG.	192	SF
407437**	NA	SENTRY SHACK	20	SF
407499**	NA	PORT. FIELD OFFICE BLDG.	192	SF
407501**	NA	STORAGE BLDG.	192	SF
407502**	NA	SENTRY SHACK	20	SF
407542**	NA	PORTABLE HEAD	54	SF
407559**SEAL BEACH		PORT. BLDG.	192	SF
407560**	NA	PORTABLE HEAD	54	SF
407767**	NA	STORAGE BLDG.	80	SF
407972**	J-17	SHOP 72 GEAR SHED	400	SF
408014**	NA	SENTRY SHACK	20	SF
408020**	NA	SENTRY SHACK	16	SF
408021**	C-27	RECEIVING AREA SHED	682	SF
408033**	C-26	LUMBER STORAGE	899	SF
408034**	E-28	STORAGE BLDG.	672	SF
408035**	E-28	STORAGE BLDG.	672	SF
408036**	E-28	STORAGE BLDG.	672	SF
408037**	F-30	CLOCKING STATION	120	SF
408038**	NA	SENTRY SHACK	20	SF
408039**	NA	SENTRY SHACK	20	SF
408046**	D-26	FLAMMABLES STORAGE BLDG.	80	SF
408051**	NA	SENTRY SHACK	20	SF
408054**	NA	SENTRY SHACK	20	SF
408055**	D-18	CLOCKING STATION	120	SF
408062**	G-36	PAINT STORAGE	180	SF
408063**	NA	SENTRY SHACK	20	SF
408065**	H-32	PORT. FIELD OFFICE	21	SF
408066**	M-27	PAINT STORAGE BLDG.	150	SF
408088**	NA	ALARM SYSTEM, SUMP PUMPS	LS	
408105**	K-21	OFFICE BLDG.	372	SF
408106**	NA	PORT. OFFICE BLDG.	280	SF
408107**	J-22	SHIP REPAIR SHOP	768	SF
408110**	NA	FIRE & WATCH REPORTING SYSTEM	LS	
408348**	D-35	GARDNER'S SHOP	208	SF
408349**	C-21	VEHICLE WASH RACK	1,200	SF
408350**	NA	TIMBER FENDER SYS/QUAY WALL	821	LF
408352**	NA	PORTABLE HEAD	80	SF
408353**	NA	PORTABLE HEAD	80	SF
408354**	NA	PORTABLE HEAD	80	SF
408355**	NA	PORTABLE HEAD	80	SF
408356**	NA	PUBLIC ADDRESS SYSTEM	LS	
408357**	C-21	MOTOR TRUCK SCALE	240	SF
408358**	I-32	CLEANING SHELTER	612	SF
[illegible]**	NA	CLOCKING STATION	[illegible]	SF
[illegible]**	NA	CLOCKING STATION	[illegible]	SF
[illegible]**	NA	CLOCKING STATION	[illegible]	SF
[illegible]**	NA	CLOCKING STATION	[illegible]	SF
[illegible]**	E-[illegible]	SHED STORAGE (EAST OF BLDG. [illegible])	[illegible]	SF
[illegible]**	[illegible]	SHELTER, SANDBLAST AREA	LS	
[illegible]**	I-[illegible]	ASSEMBLY SLAB	LS	
[illegible]**	[illegible]	ASSEMBLY SLAB	LS	
[illegible]**	E-[illegible]	CHEMICAL [illegible] TANK CLEANING SHELTER	[illegible]	[illegible]
[illegible]**	E-[illegible]	MATERIAL [illegible]	1,680	[illegible]
[illegible]**	K-[illegible]	CHEMICAL CLEANING SHELTER	[illegible]	
[illegible]**	NA	PORTABLE HEAD	[illegible]	
[illegible]**	NA	SENTRY SHACK	20	SF
[illegible]**	NA	SENTRY SHACK	20	SF
[illegible]**	M-[illegible]	PAINT STORAGE BLDG.	150	SF
[illegible]**	I-26	PAINT STORAGE BLDG.	150	SF
61866[illegible]**	GA-21	SANDBLAST GEAR SHED	132	SF
618628**	NA	CRANE TRACKAGE	[illegible]	MI
618640**	NA	PORT. FIELD OFFICE BLDG.	84	SF
	B36	FLOOD LIGHTING/SANDBLAST AREA	797	LF
	NA	PAVING	10,333	SY
	NA	DIKE WALL/WALKWAY	452	LF

[illegible]	[illegible]	[illegible]	LS	
P-041	D-25	MECH. INST. CALIBRATION FACILITY	4,000	SF
P-006	H-33	COMPRESSED AIR SYSTEM	LS	
P-057	B-19	RAISE ACCESS ROADS & TRACKS	LS	
P-014	F-30	WEAPONS SHOP EXTENSION	87,000	SF
P-024	K-20	WATERFRONT PROTECTION	1,213	LF
P-028	B-28	SEWER SYSTEM IMPROVEMENTS	3,600	LF
P-037	G-26	COLLIMATION FACILITIES	LS	
P-048	E-36	CENTRAL STEAM PLANT	LS	
P-054	F-30	ELECTRONIC FACILITY	60,000	SF
P-055	D-31	MOTOR REPAIR FACILITY	21,240	SF
P-003	H-35	CRANE TRACKS, DRYDOCK 1	906	LF
P-002	J-36	FIRE PROTECTION, DRYDOCKS 1, 2, & 3	14,000	GM
P-050	N-18	UTILITIES, PIER 6	LS	
P-025	L-24	PIER 4 REPLACEMENT	17,625	SF

THE PLANNED 5-YEAR MILCON PROGRAM SHOWN ABOVE HAS BEEN APPROVED BY THE SHIPYARD DEVELOPMENT BOARD AND BUREAU OF SHIPS.

NOTES:

- * DENOTES MULTIPLE USE OF BUILDING
- ** PORTABLE OR MINOR TEMPORARY BUILDING OR STRUCTURE NOT SHOWN ON MAPS
- *** BUILDING LOCATED OUTSIDE THE SHIPYARD AREA; NO SUITABLE AREAS AVAILABLE ON SHIPYARD FOR FAMILY HOUSING

LEGEND:

FB - FEET OF BERTHING
GA - GALLONS
LS - LUMP SUM
LF - LINEAL FEET
MI - MILES
NA - NOT APPLICABLE
PI - PILING
SF - SQUARE FEET
TC - TONS CAPACITY
GM - GALLONS PER MINUTE

NO	AMD OR COR	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE	APPROVAL
(4)	COR	UPDATED TO REFLECT EXISTING CONDITIONS AS OF 15 NOV 1965	12/1/65	[illegible]

DRAWN [signature]
BRANCH SUP'V [signature]
DIR. ENG. DIV. [signature]
PWO [signature] DATE [illegible]
CONCUR COM [signature] DATE [illegible]

DEPARTMENT OF THE NAVY - BUREAU OF YARDS & DOCKS

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIF.
GENERAL DEVELOPMENT MAP
INDEX OF STRUCTURES
EXISTING & PLANNED PRE M-DAY

SUBMITTED SOWESTDIVDOCKS [signature] 12/1/65
BY DIRECTION DATE

APPROVED BY BUDOCKS
PER BUDOCKS LTR R-4114 / 76 [illegible] OF 27 AUG 1962

SCALE

SHEET 2 OF 3

Y & D DWG NO 624,211

INDEX OF EXISTING STRUCTURES

BLDG NO (1)	LOCATION (2)	DESCRIPTIVE TITLE (CURRENT USE) (3)	QUANTITY OR CAPACITY (4)	UNIT OF MEASURE (5)	PLANNED USE (6)
43	D-21	PAINT SPRAY BLDG.	861	SF	
51	C-21	ACETYLENE GENERATING PLANT	1,376	SF	
52	E-22	TRANSMITTER BLDG.	2,501	SF	
54*	C-22	TRANSPORTATION SHOP	29,609	SF	
54*	C-22	TRANSPORTATION OFFICE	7,388	SF	
57*	L-18	SERVICE BLDG.	15,000	SF	
57*	L-18	CIVILIAN CAFETERIA	6,720	SF	
58	M-18	SERVICE BLDG.	21,300	SF	
60	D-21	WATER STORAGE TANK (POTABLE)	200,000	GA	
61	J-18	CABLE REPAIR BLDG.	1,662	SF	
62	D-23	RADIO ANTENNA TOWER	LS		
63	K-22	DERRICK BLDG.	168	SF	
96	C-30	DEGAUSSING BLDG.	1,680	SF	
97	E-26	SERVICE BLDG.	8,204	SF	
98	D-26	SERVICE BLDG.	9,280	SF	
99*	F-26	OPTICAL SHOP	800	SF	
99*	F-26	SERVICE BLDG.	5,200	SF	
100*	C-23	P.W. SHOPS	31,821	SF	
100*	C-23	P.W. SHOP ADMINISTRATION BLDG.	9,699	SF	
101*	C-24	GARAGE REPAIR	5,422	SF	
101*	C-24	INDUSTRIAL WAREHOUSE	11,765	SF	
102	D-27	WOODWORKING & RIGGERS SHOP BLDG.	117,443	SF	
103	H-26	MECHANICS SERVICE BLDG.	15,296	SF	
104*	I-26	COMPRESSED AIR PLANT	4,617	SF	
104*	I-26	ELECTRIC SUB STATION NO. 3	3,597	SF	
104*	I-26	STEAM GENERATING PLANT	2,636	SF	
104A	I-26	UTILITIES OFFICE BLDG.	3,000	SF	
105	I-28	ELECTRIC SUB STATION NO. 4	1,275	SF	
106	J-24	ELECTRIC SUB STATION NO. 5	952	SF	
107	L-26	ELECTRIC SUB STATION NO. 6	750	SF	
109	H-28	PAINT SHOP BLDG.	15,370	SF	
110	C-26	WAREHOUSE	1,950	SF	
111	B-23	SENTRY SHACK	392	SF	
112*	E-24	DISPENSARY BLDG.	8,568	SF	
112*	E-24	SUPV. SHIPBUILDING OFFICE	8,568	SF	
113	F-27	CIVILIAN CAFETERIA	6,664	SF	
114	G-24	TRANSFORMER VAULT "B"	88	SF	
115	G-24	SEWER PUMP HOUSE "B"	176	SF	
116	B-28	TRANSFORMER VAULT "F"	88	SF	
117	B-28	SEWER PUMP HOUSE "F"	270	SF	
118	I-28	DIESEL REPAIR SHOP BLDG.	5,202	SF	
119	L-26	RIGGERS STORAGE BLDG	289	SF	
120	M-26	SERVICE BLDG. - PIER 3	6,448	SF	
121	D-22	WAREHOUSE	9,040	SF	
122	D-21	SHOP 02 - INDUSTRIAL SHOP BLDG.	4,040	SF	
124	F-28	STORAGE BLDG.	2,758	SF	
125	C-30	SHIPS EQUIPMENT LAYDOWN BLDG.	3,150	SF	
128	D-29	STEEL SHOP BLDG.	145,084	SF	
129	D-30	ELECTRIC SHOP BLDG.	111,912	SF	
130	H-29	SHEETMETAL SHOP BLDG.	56,379	SF	
131	H-30	PIPE & COPPER SHOP BLDG.	61,612	SF	
132*	M-32	STORAGE	3,060	SF	
132*	M-32	MACHINE SHOP BLDG.	335,514	SF	
133	G-31	HYDRAULIC SHOP BLDG.	4,800	SF	
134	L-27	ELECTRIC SUB STATION NO. 10	749	SF	
135	J-24	SHOP STORES BLDG.	16,451	SF	
137	F-23	TIDE GAUGE HOUSE, PIER 2	80	SF	
138	M-29	SERVICE BLDG., PIER 2	6,448	SF	
139*	J-31	MISSILE RESEARCH SHOP	1,860	SF	
139*	J-31	ADMINISTRATION BLDG.	1,380	SF	
140	E-33	CIVILIAN CAFETERIA	26,064	SF	
141	D-32	ADMINISTRATION BLDG.	102,136	SF	
142	C-34	PERSONNEL OFFICE BLDG.	11,308	SF	
143	C-34	SENTRY SHACK	174	SF	
144	D-32	PRINT SHOP BLDG.	4,068	SF	
145	F-33	INDIAN OFFICE BLDG.	7,017	SF	
146	B-35	CHLORINATOR BLDG.	140	SF	
147	D-34	ADMINISTRATION BLDG.	4,360	SF	
148	J-30	MISSILE SHELTER	768	SF	
149	I-32	SERVICE BLDG.	9,300	SF	
150*	E-36	ELECTRIC SUB STATION NO. 1	5,000	SF	
150*	E-36	STEAM GENERATING PLANT	3,000	SF	
150*	E-35	COMPRESSED AIR PLANT	3,000	SF	
151	I-33	ELECTRIC SUB STATION NO. 2	7,500	SF	
152	M-33	ELECTRIC SUB STATION NO. 7	1,248	SF	
153*	J-33	SERVICE BLDG. (OFFICES)	5,250	SF	
153*	J-33	SERVICE BLDG. (SHOP)	3,000	SF	
155	L-33	SERVICE BLDG.	6,448	SF	
158	M-22	SHOP 72 WAREHOUSE	4,000	SF	
160	C-36	SANDBLAST WORK AREA	LS		
161*	D-36	FORCES AFLOAT ADMINISTRATION	824	SF	
161*	D-36	FORCES AFLOAT STORAGE BLDG.	1,290	SF	
166	D-36	PRESERVATION BLDG.	1,000	SF	
170	G-36	SANDBLAST BLDG.	1,302	SF	
171	D-30	SANDBLAST BLDG. NO. 2	364	SF	
172	G-36	PAINT SPRAY BLDG.	493	SF	
173	F-36	SAND SILO	LS		
174	M-36	RADIAC BLDG.	1,540	SF	
178	J-20	FIELD OFFICE BLDG.	80	SF	
179	J-20	FIELD OFFICE BLDG.	540	SF	
351	E-34	FUEL OIL TANK	10,700	GA	
352	I-26	FUEL OIL TANK	LS		
356	D-24	REGULAR GAS TANK	10,000	GA	
357	D-24	ETHYL GAS TANK	10,000	GA	
358	D-24	WHITE GAS TANK	1,013	GA	
359	D-24	DIESEL OIL TANK	2,631	GA	
360	D-24	DIESEL FUEL TANK	2,631	GA	
361	D-24	KEROSENE TANK	971	GA	
[illegible]	[illegible]	[illegible] TANK	[illegible]	[illegible]	

BLDG NO (1)	LOCATION (2)	DESCRIPTIVE TITLE (CURRENT USE) (3)	QUANTITY OR CAPACITY (4)	UNIT OF MEASURE (5)	PLANNED USE (6)
374	D-24	LUBE OIL TANK	LS		
377	J-25	SALT WATER PRESSURE TANK	12,000	GA	
378	H-28	PAINT THINNER TANK	3,000	GA	
379	J-21	SMALL CRAFT FUEL TANK	5,000	GA	
PIERS					
PIER NO. 1	K-33	REPAIR PIER	2,015	FB	
PIER NO. 2	K-29	REPAIR PIER	2,444	FB	
PIER NO. 3	K-27	REPAIR PIER	2,444	FB	
PIER NO. 4	K-25	REPAIR PIER	1,204	FB	
PIER NO. 6	K-26	REPAIR PIER	2,444	FB	
DRYDOCKS					
DD NO.1	J-35	DRYDOCK (CVA)	169,260	SF	
DD NO.2	J-27	DRYDOCK (CA)	67,914	SF	
DD NO.3	J-25	DRYDOCK (CA)	67,914	SF	
TEMPORARY BUILDINGS, STRUCTURES & PORTABLE BUILDINGS					
A*	I-23	SHIP REPAIR SHOP	19,150	SF	
A*	I-23	OFFICE BLDG.	1,950	SF	
A-P	H-22	WAREHOUSE, WELDERS	1,500	SF	
A-T	E-24	ADMINISTRATION BLDG.	1,500	SF	
A-V	D-23	SHOP 07, WAREHOUSE	1,350	SF	
A-W	C-31	SHOP 51, STORES BLDG.	3,600	SF	
A-X	C-31	STORAGE BLDG.	3,600	SF	
A-Y	J-20	SHOP 72, GEAR SHED	700	SF	
B-G	D-23	SHOP 07, WAREHOUSE	1,350	SF	
B-16***	SEAL BEACH	ELECTRIC MAINT. SHOP	360	SF	
SDF-1	C-36	STORM DRAIN PUMP PIT	LS		
SDF-2	J-32	STORM DRAIN PUMP PIT	LS		
SDF-3	J-28	STORM DRAIN PUMP PIT	LS		
SDF-6	J-19	STORM DRAIN PUMP PIT	LS		
SWF-1	J-25	SALT WATER PUMP PIT NO. 1	783	SF	
SWF-2	J-29	SALT WATER PUMP PIT NO. 2	783	SF	
W-8***	SEAL BEACH	UNDERWATER DETECTION STATION	2,300	SF	
W-8A**	SEAL BEACH	POWER BLDG.	200	SF	
W-8B**	SEAL BEACH	RADAR TOWER	LS		
W-8C**	SEAL BEACH	RADAR TOWER	LS		
W-9**	LONG BEACH	SHORAN TOWER	LS		
W-9A**	LONG BEACH	EQUIPMENT SHELTER	100		
400214	NA	QUAY WALLS	2,207	LF	
400215**	NA	SECURITY FENCING & WALLS	8,925	LF	
400216**	NA	SECURITY FENCING & WALLS	10,116	LF	
400217**	C-33	FLAG POLE	LS		
400218**	NA	SIDEWALKS	2,747	LF	
400219**	NA	RAILROAD TRACKAGE	4.5	MI	
400222**	NA	ROADS	5.0	MI	
400223**	NA	PARKING AREA	60,764	SY	
400224**	NA	OPEN STORAGE AREA-BULK (CONCRETE)	11,668	SY	
400225**	NA	SEA WALL	1,577	LF	
400228**	H-30	LIGHT TOWER NO. 2	LS		
400227**	F-30	LIGHT TOWER NO. 3	LS		
400230**	NA	OPEN STORAGE AREA-BULK (BITUMINOUS)	57,016	SY	
400231**	D-36	SEPTIC TANK	350	GA	
400233**	NA	OPEN STORAGE AREA-BULK (OTHER)	38,971	SY	
400234**	NA	MOORING DOLPHINS	536	PI	
400237**	I-20	RADAR CHECK-OUT TOWER	LS		
403146**	NA	SENTRY SHACK	30	SF	
403147**	NA	SENTRY SHACK	35	SF	
404090**	NA	WATER DISTRIBUTION SYSTEM	85,411	LF	
404091**	NA	STEAM DISTRIBUTION SYSTEM	27,679	LF	
404093**	NA	STORM DRAINAGE SYSTEM	40,840	LF	
404094**	NA	OXYGEN DISTRIBUTION SYSTEM	35,660	LF	
404095**	NA	COMPRESSED AIR SYSTEM	38,079	LF	
404096**	NA	ACETYLENE DIST. SYSTEM	36,425	LF	
404097**	NA	GAS PIPE LINE	18,050	LF	
404098**	NA	SANITARY SEWERS	22,475	LF	
404237**	NA	PORTABLE HEAD	48	SF	
404248**	F-27	CLOCKING STATION	340	SF	
404250**	NA	PORTABLE HEAD	54	SF	
404251**	NA	PORTABLE OFFICE BLDG.	20	SF	
404252**	J-20	CLOCKING STATION	240	SF	
404253**	H-23	CLOCKING STATION	280	SF	
404268**	F-27	CLOCKING STATION	360	SF	
404271**	F-27	CLOCKING STATION	360	SF	
404272**	F-27	CLOCKING STATION	360	SF	
404274**	D-30	PLATING TANK SHELTER	483	SF	
404278**	H-28	ACID TANK SHELTER	1,032	SF	
404277**	J-20	CLOCKING STATION	240	SF	
404284**	NA	PORT. OFFICE BLDG.	25	SF	
404288**	NA	PORT. HEAD	54	SF	
404290**	NA	PORT. GALLEY NO. 1	220	SF	
404292**	NA	PORT. HEAD	56	SF	
404293**	NA	PORT. HEAD	80	SF	
404297**	G-30	LAUNDRY PICK-UP BLDG.	192	SF	
404314**	H-18	STORAGE BLDG.	96	SF	
404317**	NA	PORT. GALLEY NO. 2	220	SF	

BLDG NO (1)	LOCATION (2)	DESCRIPTIVE TITLE (CURRENT USE) (3)	QUANTITY OR CAPACITY (4)	UNIT OF MEASURE (5)	PLANNED USE (6)
404332**	NA	PONT. HEAD	276	SF	
404628**	NA	STORAGE BLDG. PORTABLE	500	SF	
404642**	NA	CLOCKING STATION	500	SF	
404646**	E-20	L-E GEAR ROOM BLDG.	60	SF	
404664**	C-30	CLOCKING STATION	360	SF	
404669**	E-31	SHOP 51, SHOP STORES OFFICE	112	SF	
404673**	NA	SENTRY SHACK	35	SF	
405764**	C-35	STORAGE BLDG.	216	SF	
406378**	NA	COMM. LINES, TELEPHONE	5.55	MI	
406457**	K-23	FLAMMABLE STORAGE BLDG.	60	SF	
406465**	NA	SENTRY SHACK	35	SF	
406605**	NA	COMMUNICATION LINES	6.6	MI	
407418**	NA	SENTRY SHACK	30	SF	
407421**	NA	ADMINISTRATION BLDG.	192	SF	
407427**	NA	PORTABLE OFFICE BLDG.	192	SF	
407429**	NA	SENTRY SHACK	20	SF	
407430**	NA	PORT. FIELD OFFICE BLDG.	192	SF	
407431**	NA	ADMINISTRATION BLDG.	192	SF	
407433**	NA	ADMINISTRATION BLDG.	192	SF	
407497**	NA	SENTRY SHACK	20	SF	
407499**	NA	PORT. FIELD OFFICE BLDG.	192	SF	
407501**	NA	STORAGE BLDG.	192	SF	
407502**	NA	SENTRY SHACK	20	SF	
407582**	NA	PORTABLE HEAD	54	SF	
407559**	SEAL BEACH	PONT. BLDG.	192	SF	
407560**	NA	PORTABLE HEAD	54	SF	
407767**	NA	STORAGE BLDG.	80	SF	
407973**	J-17	SHOP 72 GEAR SHED	400	SF	
408014**	NA	SENTRY SHACK	20	SF	
408020**	NA	SENTRY SHACK	16	SF	
408029**	C-27	RECEIVING AREA SHED	682	SF	
408033**	C-26	LUMBER STORAGE	899	SF	
408034**	E-28	STORAGE BLDG.	672	SF	
408035**	E-28	STORAGE BLDG.	672	SF	
408036**	E-28	STORAGE BLDG.	672	SF	
408037**	F-30	CLOCKING STATION	120	SF	
408038**	NA	SENTRY SHACK	20	SF	
408039**	NA	SENTRY SHACK	20	SF	
408046**	D-26	FLAMMABLES STORAGE BLDG.	80	SF	
408051**	NA	SENTRY SHACK	20	SF	
408064**	NA	SENTRY SHACK	20	SF	
408065**	D-18	CLOCKING STATION	120	SF	
408066**	G-36	PAINT STORAGE	180	SF	
408063**	NA	SENTRY SHACK	20	SF	
408065**	H-32	PORT. FIELD OFFICE	21	SF	
408066**	M-29	PAINT STORAGE BLDG.	150	SF	
408088**	NA	ALARM SYSTEM, SUMP PUMPS	LS		
408109**	K-21	OFFICE BLDG.	372	SF	
408106**	NA	PORT. OFFICE BLDG.	280	SF	
408107**	J-22	SHIP REPAIR SHOP	768	SF	
408110**	NA	FIRE & WATCH REPORTING SYSTEM	LS		
408348**	D-35	GARDENERS SHOP	208	SF	
408349**	C-21	VEHICLE WASH RACK	1,200	SF	
408940**	NA	TIMBER FENDER SYS/QUAY WALL	821	LF	
408352**	NA	PORTABLE HEAD	80	SF	
408353**	NA	PORTABLE HEAD	80	SF	
408354**	NA	PORTABLE HEAD	80	SF	
408355**	NA	PORTABLE HEAD	80	SF	
408356**	NA	PUBLIC ADDRESS SYSTEM	LS		
408357**	C-21	MOTOR TRUCK SCALE	240	SF	
408358**	I-32	CLEANING SHELTER	612	SF	
[illegible]	NA	CLOCKING STATION	24	SF	
[illegible]	NA	CLOCKING STATION	24	SF	
[illegible]	NA	CLOCKING STATION	24	SF	
[illegible]	NA	CLOCKING STATION	24	SF	
[illegible]	E-[illegible]	PAINT STORAGE (EAST OF BLDG. 100)	600	SF	
[illegible]	[illegible]	SHELTER, SHAPBLAST AREA	LS		
408374**	I-[illegible]	ASSEMBLY SLAB	LS		
408374**	J-[illegible]	ASSEMBLY SLAB	LS		
408380**	E-[illegible]	CHEMICAL TANK CLEANING SHELTER	260	SF	
408[illegible]	E-[illegible]	[illegible]	1,680	SF	
[illegible]	M-[illegible]	[illegible]	[illegible]		
[illegible]	NA	PORTABLE HEAD	[illegible]		
[illegible]	NA	SENTRY SHACK	20	SF	
408[illegible]	NA	SENTRY SHACK	20	SF	
408[illegible]	M-[illegible]	PAINT STORAGE BLDG.	150	SF	
408[illegible]	I-[illegible]	PAINT STORAGE BLDG.	150	SF	
618[illegible]	GA-21	SANDBLAST GEAR SHED	132	SF	
618[illegible]	NA	CRANE TRACKAGE	[illegible]	MI	
618[illegible]	NA	PORT. FIELD OFFICE BLDG.	84	SF	
	B36	FLOOD LIGHTING/SANDBLAST AREA	797	LF	
	NA	PAVING	10,333	SY	
	NA	DIKE WALL/WALKWAY	452	LF	

INDEX OF PLANNED STRUCTURES AND FACILITIES

(INCLUDING ALL PLANNED LINE ITEMS)

ITEM LIN NO. (1)	LOCATION (2)	LINE ITEM TITLE (3)	QUANTITY OR CAPACITY (4)	UNIT OF MEASURE (5)
P-042	J-34	ELECTRIC DISTRIBUTION SYSTEM	LS	
P-049	H-32	PUMP & VALVE REPAIR FACILITY	LS	
P-041	D-25	MECH. INST. CALIBRATION FACILITY	4,000	SF
P-006	H-33	COMPRESSED AIR SYSTEM	LS	
P-057	B-19	RAISE ACCESS ROADS & TRACKS	LS	
P-014	P-30	WEAPONS SHOP EXTENSION	87,000	SF
P-024	K-20	WATERFRONT PROTECTION	1,213	LF
P-028	B-28	SEWER SYSTEM IMPROVEMENTS	3,600	LF
P-037	Q-26	COLLIMATION FACILITIES	LS	
P-048	E-36	CENTRAL STEAM PLANT	LS	
P-054	P-30	ELECTRONIC FACILITY	60,000	SF
P-055	G-31	MOTOR REPAIR FACILITY	21,240	SF
P-003	H-33	CRANE TRACKS, DRYDOCK 1	906	LF
P-002	J-36	FIRE PROTECTION, DRYDOCKS 1, 2, & 3	14,000	GM
P-050	N-18	UTILITIES, PIER 6	LS	
P-[illegible]	L-24	PIER 4 REPLACEMENT	17,625	SF

THE PLANNED 4-YEAR MILCON PROGRAM SHOWN ABOVE HAS BEEN APPROVED BY THE SHIPYARD DEVELOPMENT BOARD AND BUREAU OF SHIPS.

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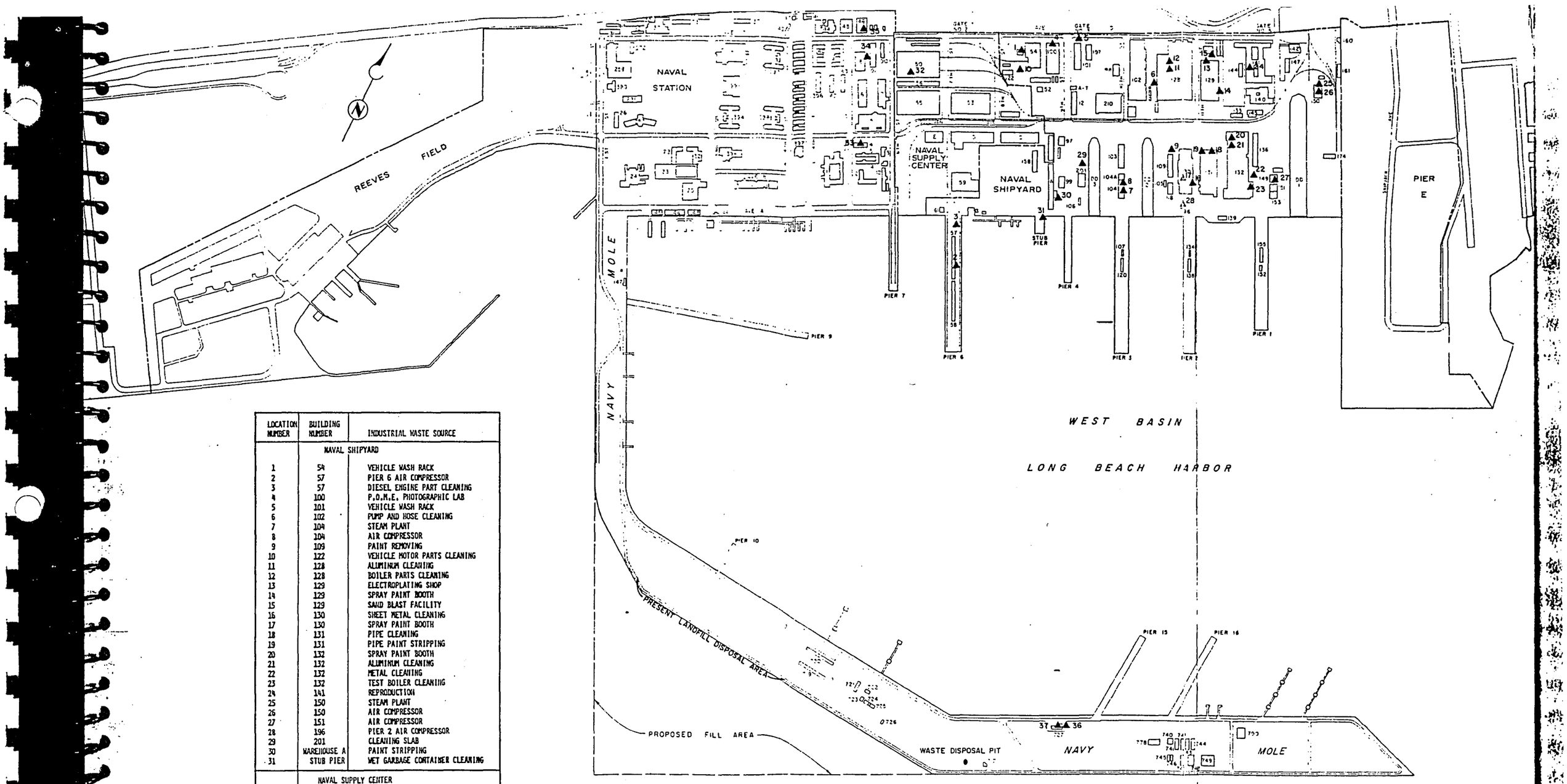
LS - LUMP SUM
LF - LINEAL FEET
MI - MILES
NA - NOT APPLICABLE
PI - PILING
SF - SQUARE FEET
TC - TONS CAPACITY
GM - GALLONS PER MINUTE

NO	AMD OR COR	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE	APPROVAL
(4)	COR	UPDATED TO REFLECT EXISTING CONDITIONS AS OF 12 NOV 1965	12/1/65	[illegible]

DRAWN [illegible] | DEPARTMENT OF THE NAVY [illegible]



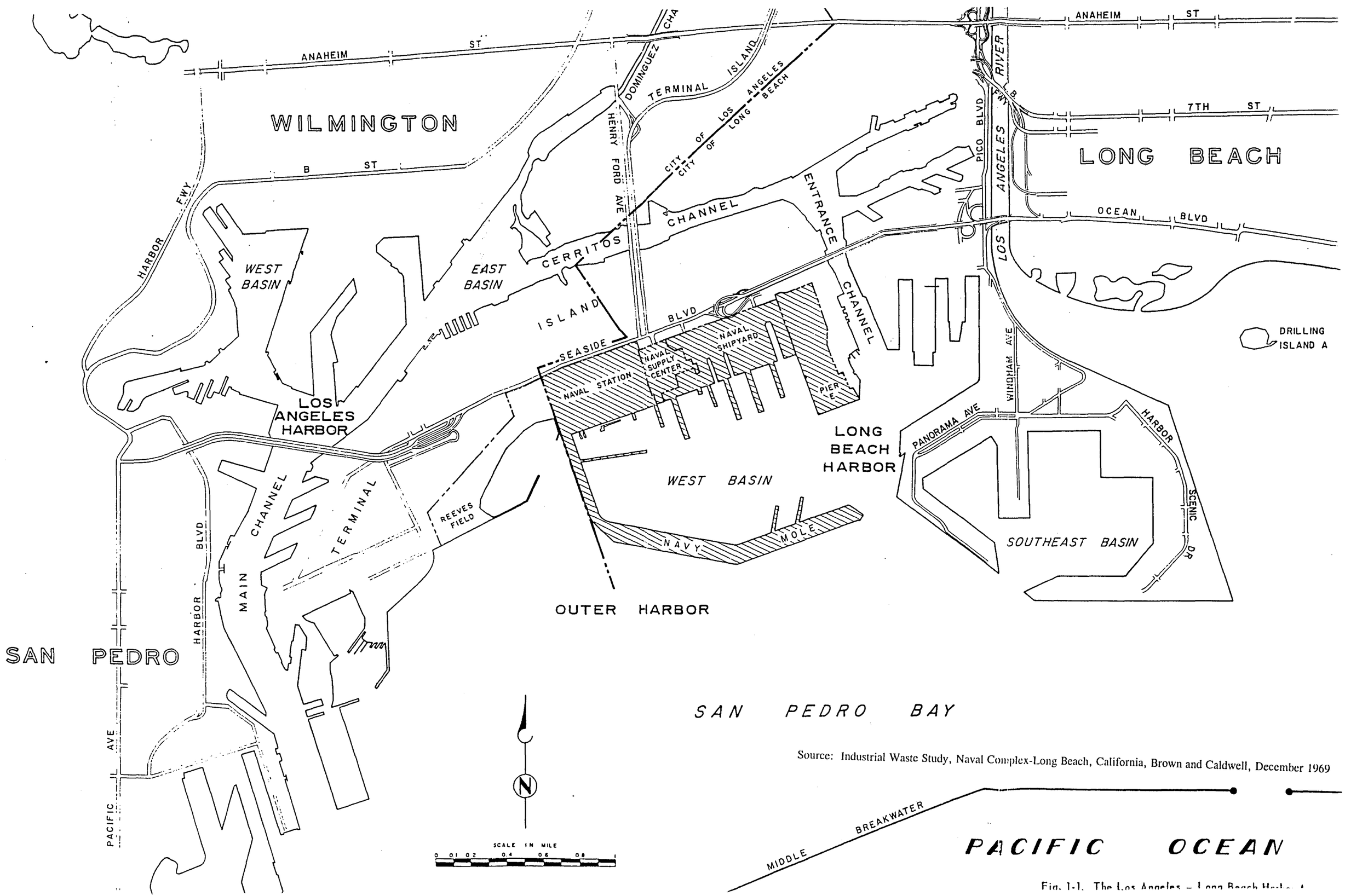
LOCATION NUMBER	BUILDING NUMBER	INDUSTRIAL WASTE SOURCE
	NAVAL SHIPYARD	
1	54	VEHICLE WASH RACK
2	57	PIER 6 AIR COMPRESSOR
3	57	DIESEL ENGINE PART CLEANING
4	100	P.O.M.E. PHOTOGRAPHIC LAB
5	101	VEHICLE WASH RACK
6	102	PUMP AND HOSE CLEANING
7	104	STEAM PLANT
8	104	AIR COMPRESSOR
9	109	PAINT REMOVING
10	122	VEHICLE MOTOR PARTS CLEANING
11	128	ALUMINUM CLEANING
12	128	BOILER PARTS CLEANING
13	129	ELECTROPLATING SHOP
14	129	SPRAY PAINT BOOTH
15	129	SAND BLAST FACILITY
16	130	SHEET METAL CLEANING
17	130	SPRAY PAINT BOOTH
18	131	PIPE CLEANING
19	131	PIPE PAINT STRIPPING
20	132	SPRAY PAINT BOOTH
21	132	ALUMINUM CLEANING
22	132	METAL CLEANING
23	132	TEST BOILER CLEANING
24	141	REPRODUCTION
25	150	STEAM PLANT
26	150	AIR COMPRESSOR
27	151	AIR COMPRESSOR
28	196	PIER 2 AIR COMPRESSOR
29	201	CLEANING SLAB
30	WAREHOUSE A	PAINT STRIPPING
31	STUB PIER	WET GARBAGE CONTAINER CLEANING
	NAVAL SUPPLY CENTER	
32	50	PACKING AND PRESERVATION
	NAVAL STATION	
33	4	STEAM PLANT
34	8	PAINT BUCKET CLEANING
35	46	LAUNDRY AND DRY CLEANER
36	727	STEAM PLANT
37	727	AIR COMPRESSOR

SCALE IN FEET

0 200 400 800 600 1000

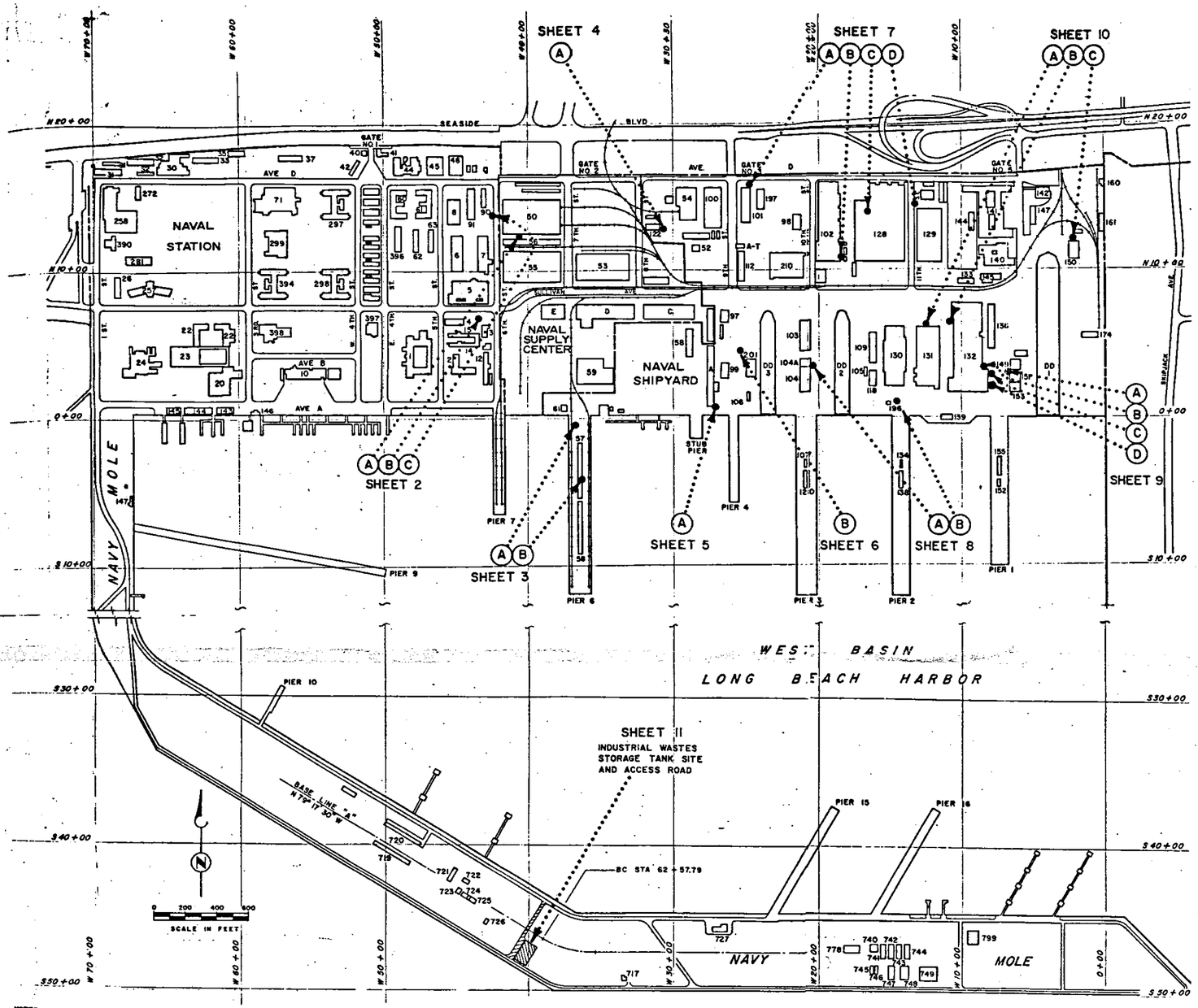
Source: Industrial Waste Study, Naval Complex-Long Beach, California, Brown and Caldwell, December 1969

Fig. 3-1. Existing Industrial Waste Sources

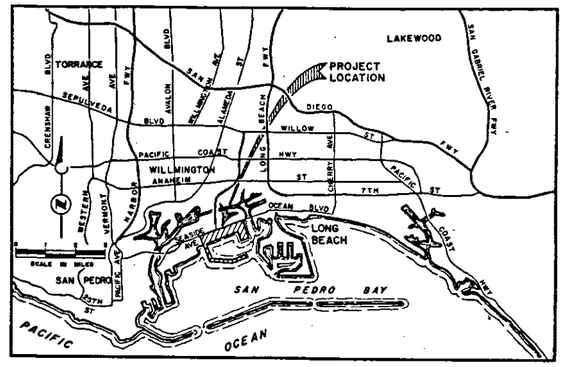


Source: Industrial Waste Study, Naval Complex-Long Beach, California, Brown and Caldwell, December 1969

Fig. 1-1. The Los Angeles – Long Beach Harbor



LOCATION MAP



VICINITY MAP

INDEX TO DRAWING

SHEET NO.	TITLE	SHEET NO.	TITLE
1	LOCATION AND VICINITY MAPS, INDEX OF DRAWINGS AND GENERAL NOTES	9	CONNECTIONS 9A, 9B, 9C, 9D
2	CONNECTIONS 2A, 2B, 2C	10	CONNECTIONS 10A, 10B, 10C
3	CONNECTIONS 3A, 3B	11	INDUSTRIAL WASTES STORAGE TANKS AND ACCESS ROAD
4	CONNECTION 4A	12	ELECTRICAL.
5	CONNECTION 5A		
6	CONNECTION 6B	13	MISCELLANEOUS DETAILS
7	CONNECTIONS 7A, 7B, 7C, 7D		
8	CONNECTIONS 8A, 8B		

SYMBOLS

WORK TO BE DONE

- SANITARY SEWER WITH MANHOLE AND DIRECTION OF FLOW
- SANITARY SEWER JACKED OR TUNNELED CROSSING
- GATE VALVE
- CLEAN OUT
- TBM — BENCH MARK
- EXISTING UTILITIES WITH MANHOLE, DIRECTION OF FLOW, TYPE AND SIZE CALLED OUT ON DRAWING
- PH — POTHOLE LOCATION
- CONCRETE SLAB
- A.C. PAVEMENT/CONCRETE PAVEMENT OR SLAB
- EXISTING GROUND LINE
- FENCE

ABBREVIATIONS

A.	AIR	F.D.	FLOOR DRAIN	NIC	NOT IN CONTRACT	S.	SLOPE
A.C.	ASPHALT CONCRETE	FLG.	FLANGE	N.P.	NAME PLATE	S.S.	SANITARY SEWER
AC.	ACETYLENE	F.M.	FORCE MAIN			SCH	SCHEDULE
		F.W.	FRESH WATER	O.C.	ON CENTER	SIM.	SIMILAR
BOT.	BOTTOM			OD	OUTSIDE DIAMETER	"SQ"	SQUARE
		G.	GAS	OICC	OFFICER IN CHARGE OF CONSTRUCTION	ST.	STEAM
CB	CATCH BASIN	GND	GROUND	OX.	OXYGEN	ST. DR.	STORM DRAIN
CIP	CAST IRON PIPE	GRD.	GRADE			S.W.	SALT WATER
C.L.	CHAIN LINK	G.V.	GATE VALVE	PE	PLAIN END		
C.O.	CLEAN OUT	G.W.	GROUND WATER	PH	POTHOLE	TBM	TEMPORARY BENCH MARK
CONN.	CONNECT(ION)			PKWY	PARKWAY	TNB	TOP AND BOTTOM
CONT.	CONTINUED OR CONTINUOUS	I.P.S.	IRON PIPE SIZE			TRANS	TRANSFORMER
				RAD	RADIUS	TYP	TYPICAL
DR.	DRAIN	MH	MANHOLE	R.C.	REINFORCED CONCRETE		
		MHW	MEAN HIGH WATER			VCP	VITRIFIED CLAY PIPE
ECC	ECCENTRIC	MJ	MECHANICAL JOINT				
EW	EACH WAY	MLW	MEAN LOW WATER			WN	WELDING NECK
						W/O	WEST OF

NOTES:

1. SURVEY FOR PROJECT WAS BASED ON THE LONG BEACH NAVAL SHIPYARD DATUM AND COORDINATE SYSTEM. VERTICAL CONTROL WAS TAKEN FROM PERMANENT BENCH MARKS. ELEVATION OF THESE PERMANENT BENCHMARKS WERE THOSE MEASURED DURING FEBRUARY AND MARCH, 1970 BY THE P.O.M.E. DEPARTMENT.

2. THE LONG BEACH NAVAL SHIPYARD DATUM IS AS FOLLOWS:

MEAN LOWER LOW WATER	100.00
HIGHEST TIDE OBSERVED	108.2
MEAN HIGH WATER	104.71
MEAN LOW WATER	100.95
LOWEST TIDE OBSERVED	97.44

3. APPROXIMATE GROUND WATER ELEVATIONS ARE SHOWN FOR EACH CONNECTION. THESE HAVE BEEN BASED ON MEASUREMENTS CONDUCTED IN JANUARY, 1971 BY LONG BEACH NAVAL SHIPYARD PERSONNEL AND AS SHOWN ON P.O.M.E. DRAWING NO. 10,479.

4. BEFORE ANY EXISTING UTILITY LINE IS TAPPED, RELOCATED, REMOVED, OR PLUGGED THE GOVERNMENT SHALL BE NOTIFIED IN ADVANCE AND THIS WORK SHALL BE DONE AT A TIME THAT IS CONVENIENT FOR THE GOVERNMENT, SO AS TO MINIMIZE INTERRUPTION OF INDUSTRIAL ACTIVITIES.

5. LOCATION OF CONNECTIONS TO SANITARY SEWERS ARE APPROXIMATE AND MAYBE MOVED IN THE FIELD, AFTER RECEIVING APPROVAL FROM OICC, TO SUIT ACTUAL CONDITIONS FOUND AFTER EXCAVATION.

6. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING TRAFFIC CONTROL REQUIREMENTS:

   ALL ROADWAYS - MAINTAIN AT LEAST ONE 15-FOOT TRAFFIC LANE AT ALL TIMES.

7. EXISTING A.C. PAVEMENT RE-SURFACING SHALL BE AS FOLLOWS:

   AVENUE "D" - 4" A.C. ON 6" BASE COURSE

   OTHER AREAS - 3" A.C. ON 6" BASE COURSE

8. EXISTING CURBS, GUTTERS, DRIVEWAYS, FENCES OR OTHER IMPROVEMENTS THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND AT THE SAME ELEVATION AND LOCATION AS EXISTING, UNLESS SPECIFICALLY INDICATED OTHERWISE.

9. REMOVAL AND REPAIR OF PORTIONS OF CONCRETE SLABS SHALL FOLLOW THESE STEPS:
   (A) OUTLINE AREA TO BE REMOVED WITH 1" DEEP SAW CUT.
   (B) REMOVE CONC. WITH JACKHAMMER OR OTHER EQUIP. THAT ALLOWS CLEANING AND REUSE OF EXIST. REINF. STL.
   (C) CUT REINF. IN CTR. OF AREA FOR ACCESS.
   (D) REPAIR: BEND REINF. INTO ORIGINAL POSITION, OVERLAY W/6x6-10/10 WWF AND POUR SLAB TO ORIGINAL DIMENSIONS

10. FOR BEDDING CASES SEE SH 13 AND SPECS.

11. FOR MISC. DETAILS SEE SH 13.

(1) DETAIL REFERENCED ON DWG 7 — 8 / 13 — DETAIL LETTER; DRAWING ON WHICH DETAIL APPEARS

(2) ON DWG 13 THIS DETAIL IS IDENTIFIED AS: DETAIL B/7 — DETAIL LETTER; DRAWING FROM WHICH DETAIL WAS REFERENCED

(3) SECTIONS ARE CROSS-REFERENCED IN A SIMILAR MANNER; EXCEPT THAT SECTIONS ARE IDENTIFIED BY NUMBERS RATHER THAN LETTERS

SECTION AND DETAIL NUMBERING SYSTEM

APPROVAL HAS BEEN GRANTED BY LONG BEACH NAVAL SHIPYARD LETTER OF 7 SEP 1971 SIGNED BY CDR E.H. BELTON PLANT OPERATIONS MAINTENANCE & ENGINEERING OFFICER

REGISTERED PROFESSIONAL ENGINEER — THEODORE X. LUTGE — No. 9219 — CIVIL — STATE OF CALIFORNIA

REVISIONS				
SYM	DESCRIPTION	PREPD BY	DATE	APPROVED

E.F.D. DWG NO.	DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND		
	WESTERN DIVISION SAN BRUNO, CALIFORNIA		
SPEC CH'K	APPROVED E.F.D. FOR COMMANDER, NAVFAC	CONTR # OR CONTRACT NO.	N62474-71-C-4402
FIRE PRO.		SPEC NO.	11-71-4402
ENG. IN CHG.	DATE	SHEET	1 OF 13
DES. DESIGN			

IF SHEET IS LESS THAN 28" X 40" IT IS A REDUCED PRINT — SCALE REDUCED ACCORDINGLY

BROWN AND CALDWELL CONSULTING ENGINEERS ALHAMBRA CALIFORNIA		DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST DIVISION	
DESIGN JLH	DR. DL	CHK. BEW	NAVAL SHIPYARD INDUSTRIAL DISPOSAL
SUPV. JLH	CH. ENGR. TVL		
SUBMITTED BY	DATE		LOCATION AND
FIRM MEMBER (TITLE)	CHIEF ENGR.		OF DRAWI
PDC	FIRE PROT.		
DR. NO.	DWG.		
SATISFACTORY TO			
TITLE	DATE		

1971

LONG BEACH NAVAL SHIPYARD

NAVAL SUPPLY CENTER

NAVAL STATION

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PARKING LOT 997

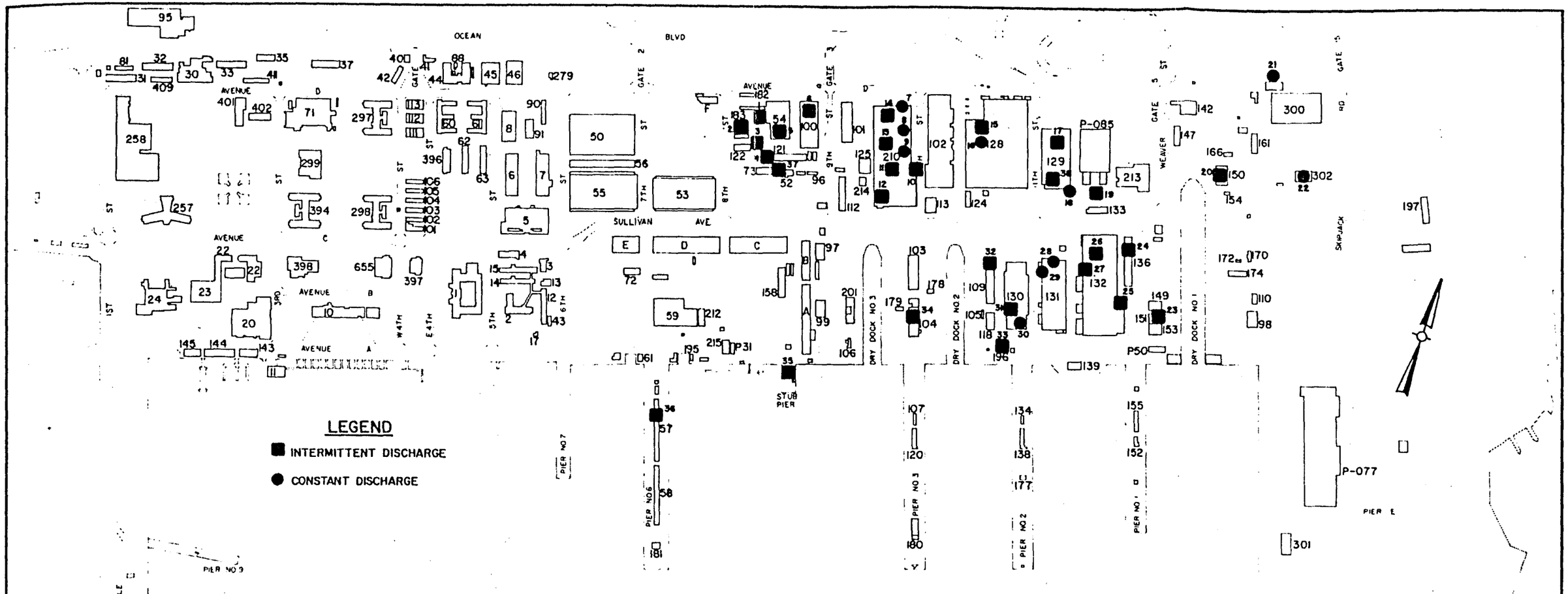
PARKING LOT 998

PARKING LOT 999

PARKING LOT 1000

PUBLIC WORKS SKETCH #3677

DRAWN BY - J.R. MORRISON 8-1-73



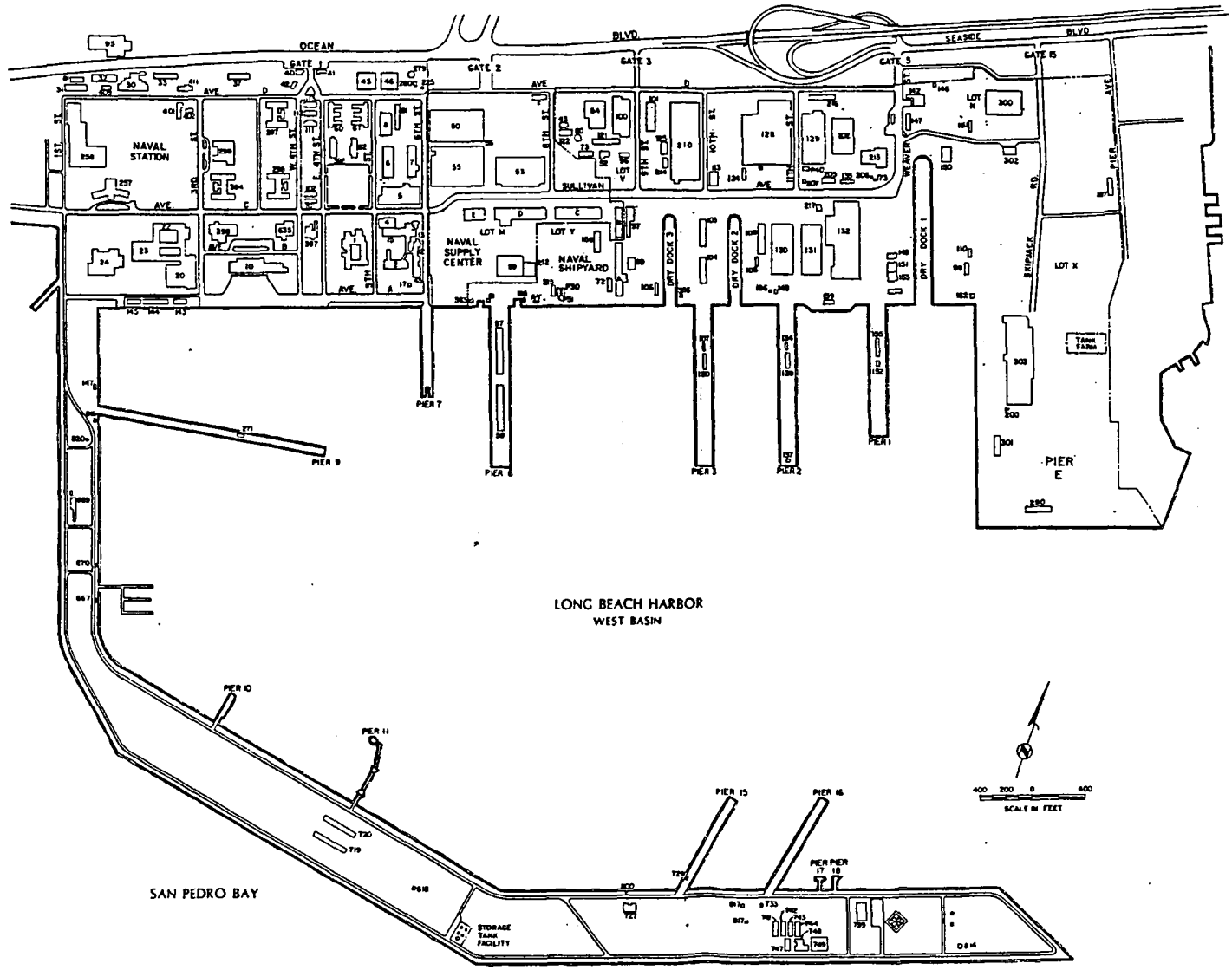
LOCATION NUMBER	BUILDING NUMBER	SOURCE OF WASTES
1	—	WASH RACK
2	—	WASH RACK
3	—	CAUSTIC CLEANING
4	—	PAINT BUCKET CLEANING (REMOVED)
5	54	SOLVENT DEGREASING
6	100	PHOTO LAB
7	210	PLATING SHOP
8	210	PRINTED CIRCUIT BOARD FACILITY
9	210	COOLING TOWER
10	210	STEAM CLEANING
11	210	SOLVENT AND VAPOR DEGREASING
12	210	PHOTO ENGRAVING
13	210	SPRAY BOOTHS
14	210	SPRAY PAINT BOOTH (WATER CURTAIN)
15	128	BOILER PARTS CLEANING
16	128	ALUMINUM CLEANING
17	129	SOLVENT DEGREASING
18	129	CLEANING AREA
19	P-085	PAINT STRIPPING (NOT OPERATIONAL)

LOCATION NUMBER	BUILDING NUMBER	SOURCE OF WASTES
20	150	AIR COMPRESSOR PLANT
21	300	COOLING TOWER
22	302	STEAM BOILER PLANT
23	151	AIR COMPRESSOR
24	136	SOLVENT DEGREASING
25	132	CAUSTIC CLEANING,
26	132	SOLVENT AND VAPOR DEGREASING
27	132	SPRAY PAINT BOOTH (WATER CURTAIN)
28	131	PIPE CLEANING
29	131	WAVEGUIDE CLEANING
30	130	SHEET METAL CLEANING
31	130	SPRAY PAINT BOOTH (WATER CURTAIN)
32	109	PAINT STRIPPING
33	196	AIR COMPRESSOR PLANT
34	104	AIR COMPRESSOR PLANT
35	STUB PIER	GARBAGE CAN CLEANING
36	57	AIR COMPRESSOR PLANT
38	52	X-RAY PRINT PROCESSESING
38	129	CHEMICAL LAB

Source: Environmental Engineering Survey, Long Beach Naval Shipyard, CDM Inc., August 1977

FIGURE 3-1
LOCATIONS OF EXISTING
INDUSTRIAL WASTE SOURCES

Source: Hazardous Materials Spill Contingency Plan, Long Beach, California, Department of the Navy, Long Beach Naval Shipyard, September 1982



SHIPYARD BUILDING INDEX

BLDG. NO.	DESCRIPTIVE TITLE
4	POWER BUILDING
43	TRANSPORTATION PAINTING
52	QUALITY ASSURANCE
54	TRANSPORTATION AUTOMOTIVE SHOP
57	SERVICE BUILDING
58	SERVICE BUILDING
60	WATER TANK
61	CABLE REPAIR
72	SUPPLY BUILDING
73	TRANSPORTATION TIRE SHOP
96	TRAINING
97	SERVICE BUILDING
98	INSULATION WAREHOUSE
99	SERVICE BUILDING
100	TRAINING AND SUPPLY
101	STORAGE
103	MECHANICS SERVICE
104	UTILITIES SHOP AND POWER BLDG.
105	SUB STATION 4
106	SUB STATION 5
107	SUB STATION 6
109	PAINT SHOP
110	SHOP 64
113	CAFETERIA
120	SERVICE BUILDING
121	TRANSPORTATION INSPECTION
122	TRANSPORTATION SHEETMETAL
124	STORAGE
125	ELECTRONIC EQUIPMENT
128	SHIPFITTER SHOP
129	HYDRAULIC SHOP
130	SHEETMETAL SHOP
131	PIPE AND COPPER SHOP
132	PIPE AND COPPER SHOP
133	SUPPLY
134	SUB STATION 10
137	TIDE GAGE BUILDING
138	SERVICE BUILDING
139	SAFETY OFFICE
142	PERSONNEL
146	CHLORINATOR BUILDING
147	INDUSTRIAL RELATIONS
148	S.W. PUMP PIT
149	AIR COMPRSSOR BUILDING
150	AIR COMPRESSOR/SUB STATION 1
151	SUB STATION 2
152	SUB STATION
153	SERVICE BUILDING
155	SERVICE GROUP BUILDING
161	SHOP AND STORAGE
162	SALT WATER PUMP STATION
173	SAND SILO
195	BOAT DISPATCHER
196	ROTARY COMPRESSOR BUILDING
197	INSTRUMENTATION CALIBRATION
200	COLLIMATION TOWER
202	ABRASIVE BLASTERS AND PAINTERS
205	METAL CLEANING BUILDING
206	ABRASIVE TANKS
207	SEWAGE PUMP STATION
210	ELECTRICAL/ELECTRONICS BUILDING
214	STORAGE
215	STORAGE
216	PLATE ABRASIVE BLASTERS
217	STORAGE
290	STORAGE
300	ENGINEERING MANAGEMENT
301	PERSONNEL
302	POWER PLANT
303	SERVICE GROUP BUILDING
356	SALT WATER PUMP STATION
383	SALT WATER PUMP STATION
A	WAREHOUSE
P30	SUPPLY STORAGE
P31	SUPPLY STORAGE
5,6,7,8,91	PUBLIC WORKS DEPT.

Figure 1-1 Long Beach Naval Shipyard

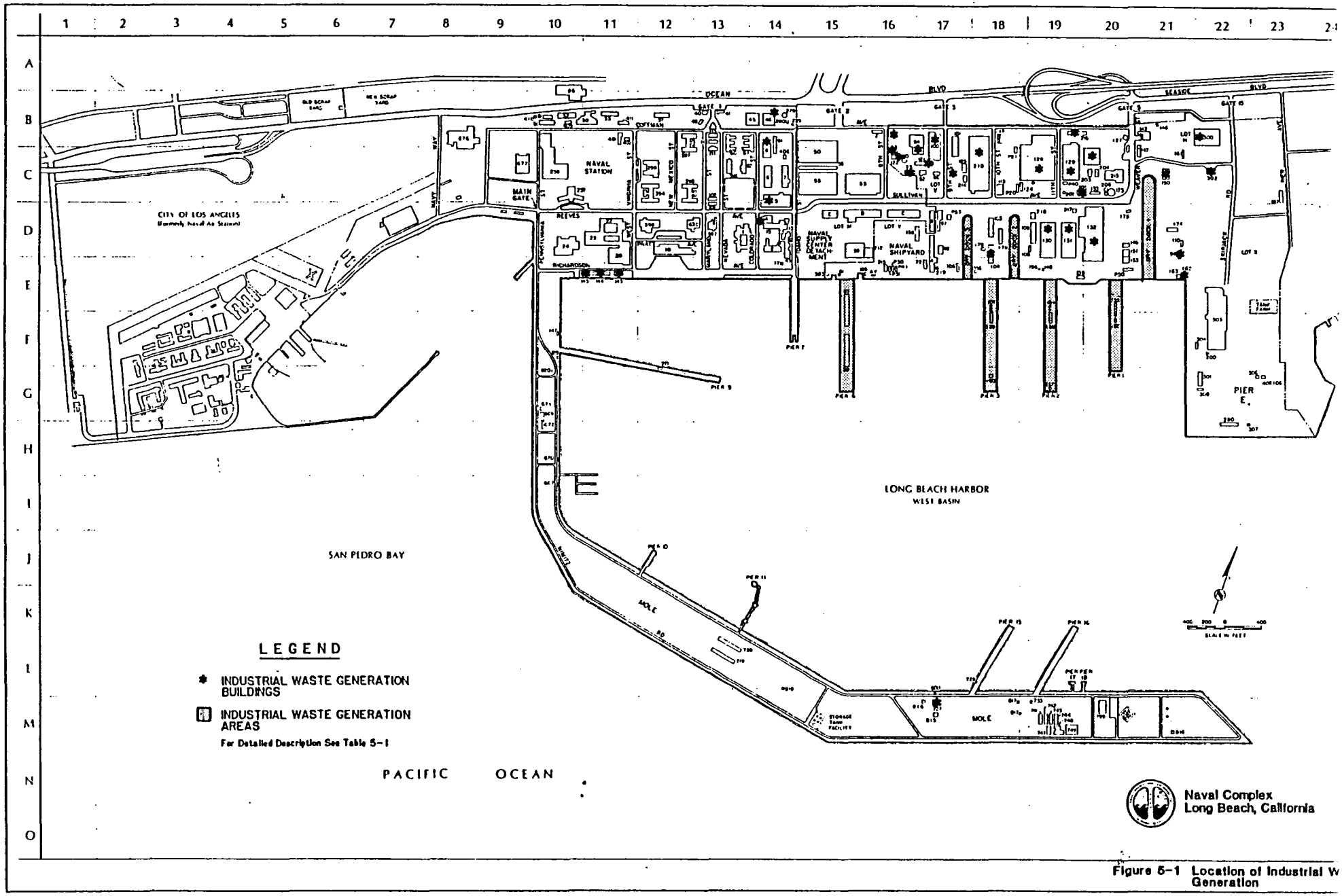


Figure 5-1 Location of Industrial W
Generation

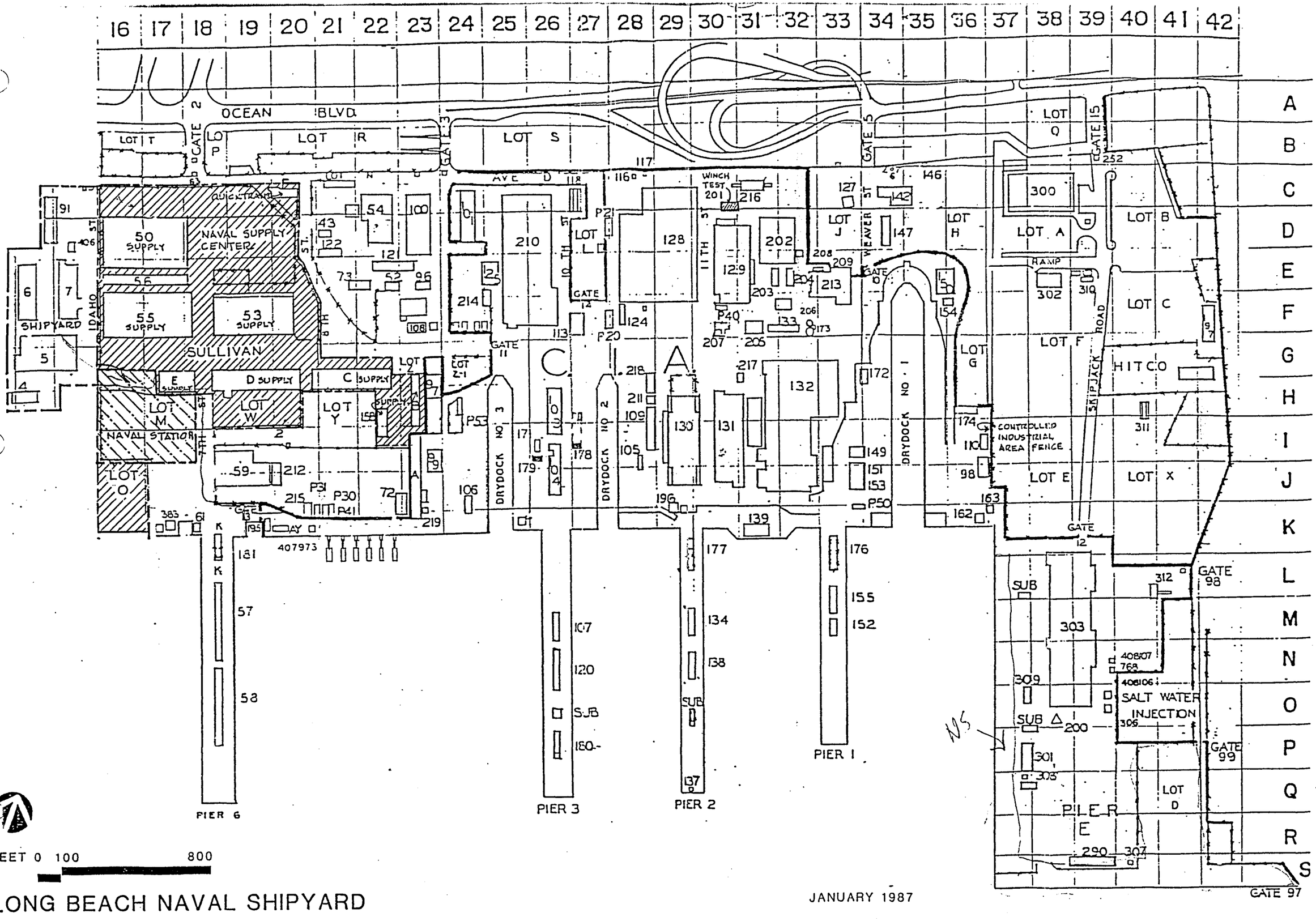
Source: Initial Assessment Study of Naval Complex, Long Beach, California, NEESA 13-033, August 1983

The laundry and dry cleaning operations, which have been conducted at Building 46 since 1944, have always discharged wastewaters into the sanitary sewer (Brown and Caldwell, 1969). The steam plant and air compressor operations were

Table 5-1 Locations of Industrial Waste Generation, Naval Complex Long Beach

Building number	Building name	Shops involved (shop number)
4	Boiler Building	Utility (03)
5	Public Works	Maintenance (07)
7	Pest Control	Maintenance (07)
8	Painting	Maintenance (07), former Naval Station Public Works
43	Transportation Painting	Transportation (02)
46	Laundry and Dry Cleaning	Naval Station
51	Former Acetylene Plant	Utility (03)
54	Transportation Automotive Shop	Transportation (02)
73	Transportation Tire Shop	Transportation (02)
98	Insulation Warehouse	Insulators (57)
100	Training and Supply	Photography
102	Equipment Cleaners	Equipment Cleaners (72)
104	Utilities Shop and Power Building	Utility (03)
121	Transportation Inspection	Transportation (02)
122	Transportation Sheetmetal	Transportation (02)
128	Shipfitter Shop	Boilermaker (41), Welding (26), Shopfitting (11)
129	Marine Machine Shop	Quality Assurance Laboratory (code 134), Machinist (38), former Plating (51)
130	Sheetmetal Shop	Sheetmetal (17)
131	Pipe and Copper Shop	Pipefitting (56), Insulators (57)
132	Machine Shop	Heavy Tools (31)
143	Harbor Craft Service	Naval Station
144	Harbor Craft Service	Naval Station
145	Harbor Craft Service	Naval Station
149	Air Compressor Building	Utility (03)
150	Air Compressor/Substation 1, former Boiler Building	Utility (03)
162	Former Acetylene Plant	Utility (03)
202	Abrasive Blasters and Painters	Abrasive Blasting, Painting (71)
205	Metal Cleaning Building	Machine Shop Metal Cleaning
210	Electical/Electronics Building	Electrical/Electronic Group Shops (36, 51, 66, 67)
216	Plate Abrasive Blasters	Abrasive Blasting (71)
300	Engineering Management	Public Works (Cooling Tower Maintenance)
302	Power Plant	Utility (03)
303	Service Group Building	Service Group Shops (64, 71, 72, 99)
727	Air Compressor	Utility (03)
Piers 1, 2,3,6		Shipboard Maintenance and Repair
Dry Docks 1,2,3		Shipboard Maintenance and Repair

transferred from the Naval Station to the Naval Shipyard in 1974. Past industrial waste discharges from both operations at Buildings 4 and 727 are discussed in detail in section 5.4.2.2.



LONG BEACH NAVAL SHIPYARD

JANUARY 1987

NAVAL SHIPYARD POINT SOURCES

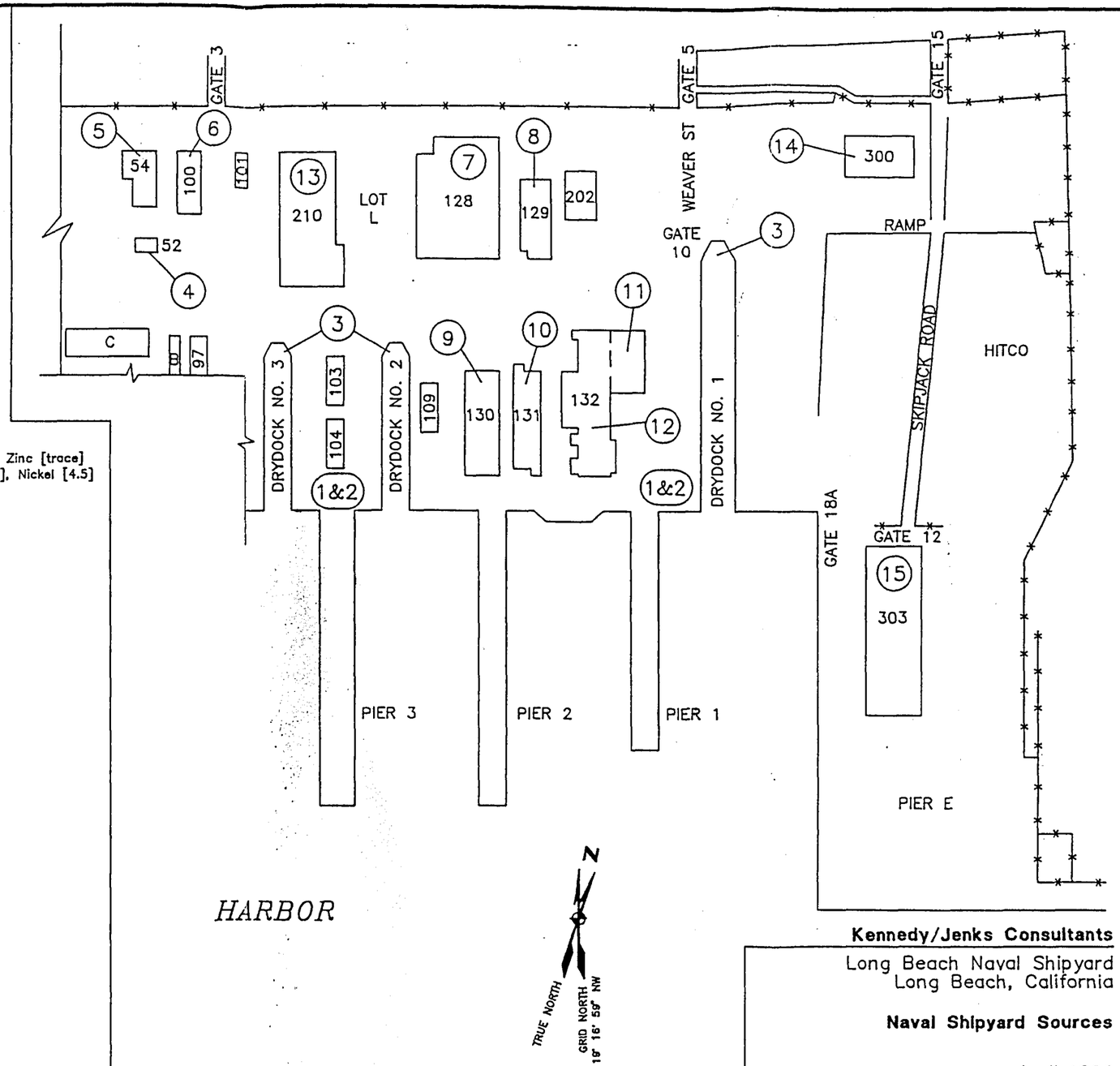
Point	Origin	Source	Flow[a] [gpd]	Flow to[b,c] IWTP [gpd]	Nature of Wastestream[d] [conc. in mg/L]
1	Boiler Wash	Boiler Wash	300	300	Sodium Nitrate [1200] Metals [trace]
2	CHT Wash	CHT Wash	220	220	Copper [1.1], Zinc [1.1], Nickel [.3] Oil and Grease [20]
3	Dry Docks 1,2,&3	Washdown	767	767	Copper [1.7], Zinc [1.0] Cadmium, Chromium, Lead, Nickel, Silver [trace]
		Drainage	73440	--	Copper [1.0], Zinc [1.3] Cadmium, Chromium, Lead, Nickel, Silver [trace]
4	Bldg. 52	X-ray Processor	.22	--	Spent fixer Silver
5	Bldg. 54	Car Wash	2.5	--	Oil & Grease [trace] Metals [trace]
6	Bldg. 100	Photo Processor	.05	--	Spent fixer Silver
7	Bldg. 128	Quench Tank	1.4	--	Oil [100%]
		Plasma Tank	28	28	top: Copper [.68]; Chromium, Nickel, Zinc [trace] bottom: Copper [15], Chromium [4.8], Nickel [4.5] Zinc [4.0], Lead [.25]
		Tumbler	6	6	None. Currently, run dry.
8	Bldg. 129	Air Compressor Diag. Center	320	--	Never Sampled.
9	Bldg. 130	Deburring Equipment	0	--	---
10	Bldg. 131	Laundry Equip.	170	--	Detergent, bleach Oil, Grease, Metals [trace]
		Water Jet Cutter	4.1	4.1	bottom: Copper [99], Nickel [28], Zinc [2.7], Chromium [.68]
11	Bldg. 132E	Hydrotest-Pipe	2000	2000	Zinc [.2]; Copper [ND]
12	Bldg. 132	Hydrotest-valves Pump test Steam Generation	670	670	Copper [6.0], Zinc [7.9] Oil [5-8%]
13	Bldg. 210	Rinsewater	570 1300 11.5	570 1300 --	Chromate [30] Alkaline/Caustic Cyanide
		Photo Processor	0.1	--	Spent fixer Silver
14	Bldg. 300	Photo/Micro Processor	2.33	--	Spent fixer Silver
15	Bldg. 303	Silk/screening	1.83	--	Spent fixer/developer mix Silver

a. These are time-averaged flows.

b. Future discharges to the IWTP are listed in this column. Only Building 210 currently discharges to the IWTP. Again all flows are time-averaged.

c. "---" indicates no flow to the IWTP.

d. The concentrations are based on available analytical lab reports. In many instances, only one or two reports were obtained, and used to describe the wastestream.



Kennedy/Jenks Consultants

Long Beach Naval Shipyard
Long Beach, California

Naval Shipyard Sources

April 1993
K/J 914020.08

Figure 5.1

Quench Tanks

PLAN
Scale 1/2"=1'-0"

SECTION B-B
Scale 1/2"=1'-0"

SECTION A-A
Scale 3"=1'-0"

DETAIL OF HOMO FURNACE PIT

PLAN SHOWING 3" I BEAM RECESS IN CONC. WALL
Scale 3"=1'-0"

NAVY DEPARTMENT
BUREAU OF YARDS & DOCKS
APPROVED _____ 19__
FOR CHIEF OF BUREAU
DRAWING NO. 265,224

NAVAL OPERATING BASE, TERMINAL ISLAND, (SAN PEDRO,) CALIFORNIA

U.S. NAVAL DRYDOCKS
PLATE SHOP
MACHINE LAYOUT NO. 2

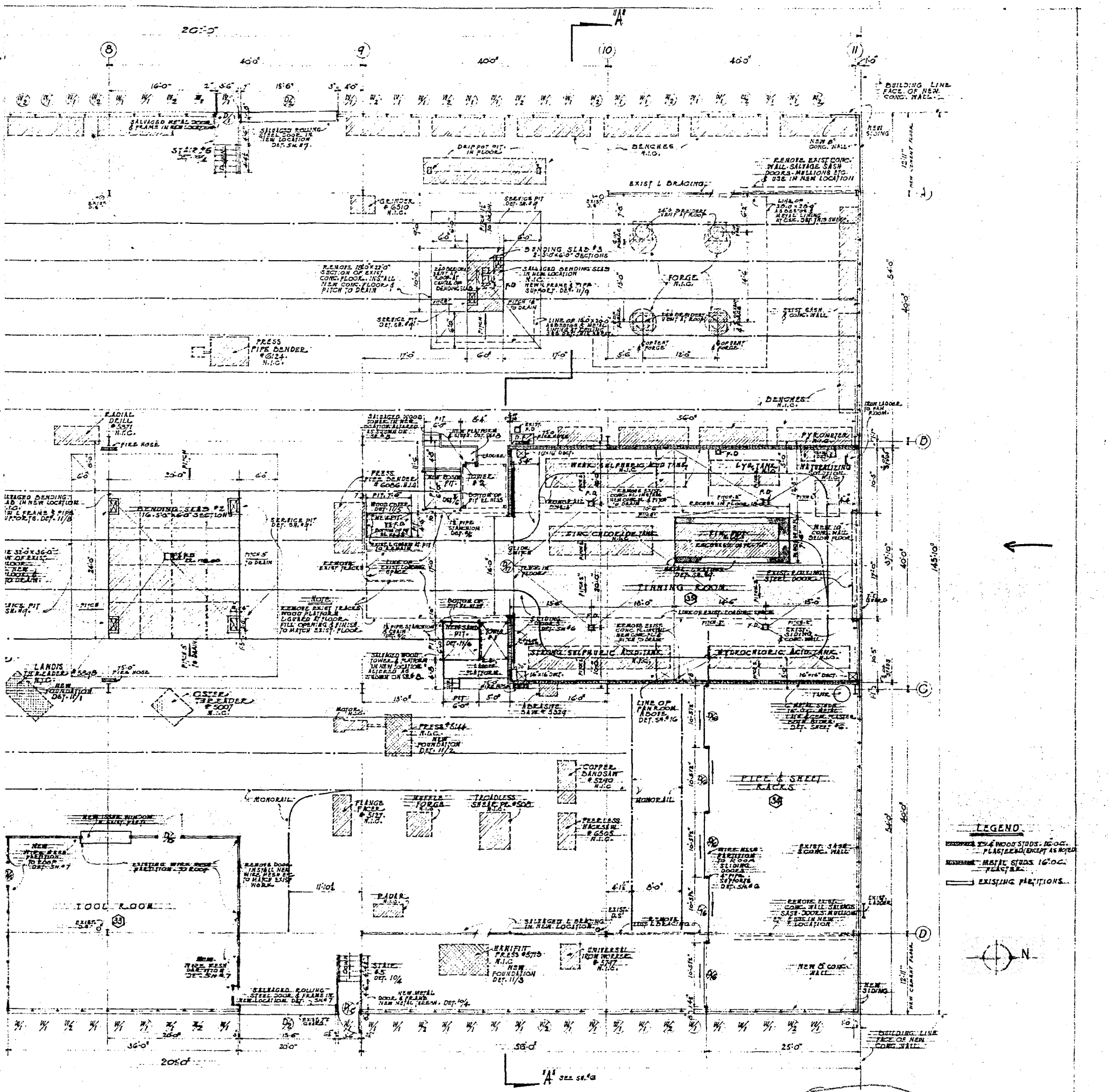
DRAWN BY J.J.J.
TRACED BY
CHECKED BY
CHIEF DRAFTSMAN
IN CHARGE
DESIGN SUPERINTENDENT
SHEET 2 OF ACCOM. DRAWING SPECIFICATION NAVY
W. DRAWING NO. 2719
SUBMITTED 4-7 1943
PUBLIC WORKS OFFICER

XNY13, N5-69(14)

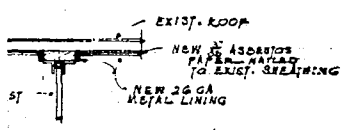
1-128-44

27191

AOC PT 10
Building 128
Quench Tanks



FLOOR PLAN OF NORTH HALF
SCALE 1/8" = 1'-0"



SHOWING ASBESTOS
LINING AT CEILING SCALE 1/4"=1'-0"
THIS SHEET FOR LOCATION

Building 131

CHECKED BY	NAVY DEPARTMENT BUREAU OF YARDS & DOCKS
CHIEF DFTMN	APPROVED 19 — Y & D DRAWING NO. 247-295
DESIGN MGR	FOR CHIEF OF BUREAU
DRAWN BY J.F.	NAVAL OPERATING BASE, TERMINAL ISLAND, (SAN PEDRO), CALIFORNIA
TRACED BY "	NAVAL DRYDOCKS T.I.
CHECKED BY C.R.C.	CONVERSION OF BUILDING N°131 TO PIPE & COPPER SHOP
SUPERVISOR LHD	FLOOR PLAN OF NORTH HALF
CHIEF DFTMN	APPROVED 1 Nov 1944
PROJECT MGR	ACTING PUBLIC WORKS OFFICER
DESIGN SUP NB Green	
SHEET 3 OF 27 ACCOM. PANYING SPECIFICATION NO 14831	
P. W. DRAWING No. N-Y.13/N5-53(3)	

14927

131-25

14927

AOC ADD 5

N 66° 32' 34" E
43.56'

N 19° 16' 25" W
80.00'

S 75° 27' 54" E
164.01'

SEASIDE BLVD.

ORTHEAST CORNER OF PARCEL NO. 2 TAKEN BY
MINENT DOMAIN IN 1940 CONDEMNATION ACTION
NTITLED UNITED STATES V. 333.6 ACRES OF LAND,
TC, NO. 1102 BH-CIVIL, FILED IN THE UNITED STATES
ISTRICT COURT FOR THE SOUTHERN DISTRICT OF
ALIFORNIA, AND THE POINT OF BEGINNING IN THE
ESCRIPTION OF PARCEL "S"

NAVAL SHIPYARD

N 66° 32' 34" E 830.31'

AREA "P"

W. TANK FARM

AREA "D"

S 23° 36' 46" E 1483.13'

N 19° 16' 25" W 1699.61'

PARCEL "S"

S 00° 03' 27" E 573.63'

N 19° 10' 45" W 100.00'

U.S. BULKHEAD LINE

N 70° 43' 01" E
150.00'

AREA "N"

WATER INJECTION PLANT

S 02° 60' 18" S 288.22'

N 70° 50' 40" E
77.97'

N 19° 10' 45" W 1603.55'

S 02° 60' 18" S 450.48'

N 70° 49' 39" E
200.22'

S 54° 37' 59" E 308.14'

BERTH 122

BERTH 124 S 70° 49' 31" W 1572.40' BERTH 123

100 0 200 400 600

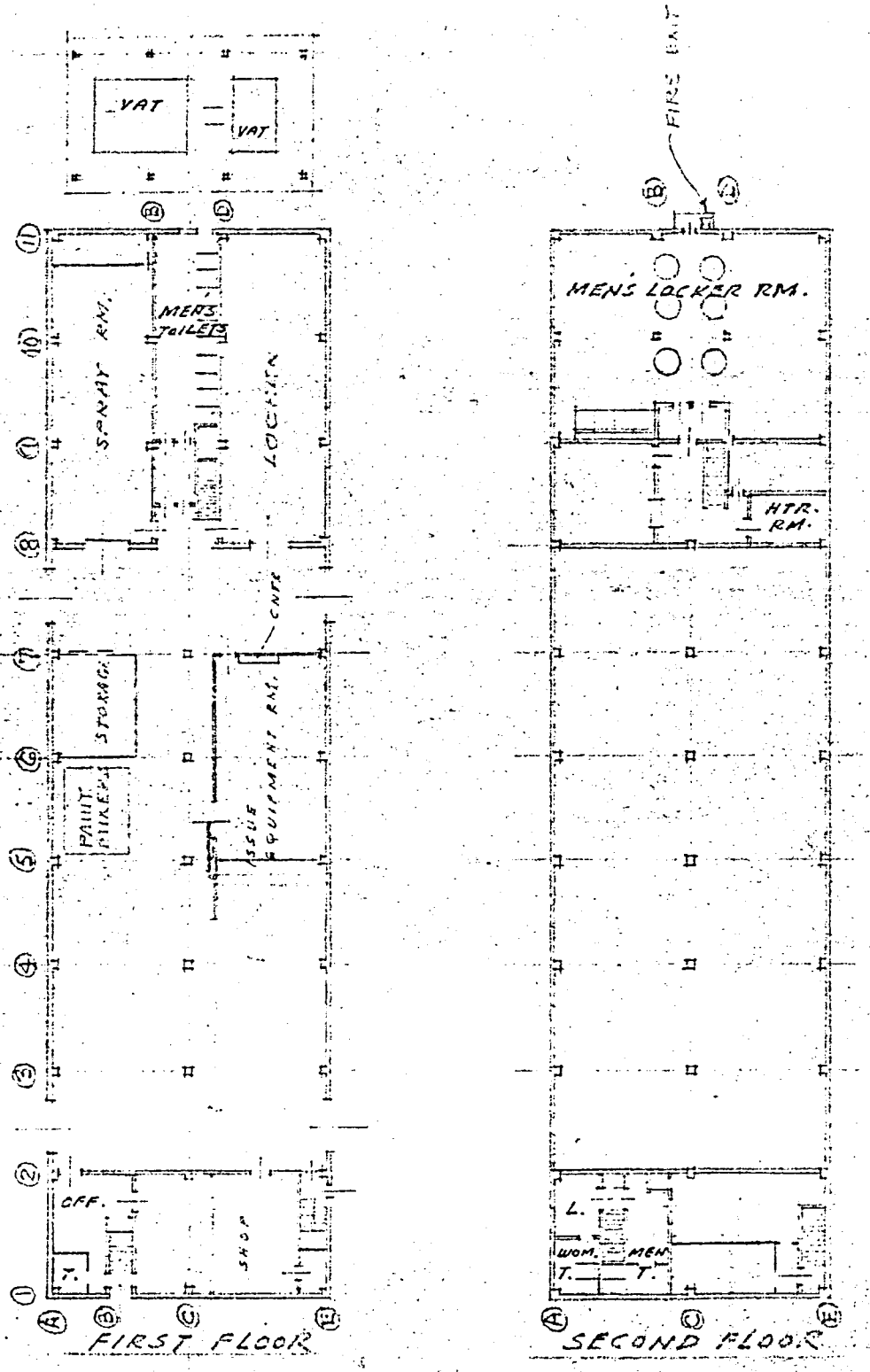
LEGEND

PARCEL S
AREA N
AREA D
AREA P
OIL WELLS
WATER INJECTION PLANT

PWO DRAWING NO	DEPARTMENT OF THE NAVY — BUREAU OF YARDS & DOCKS
8468	"PIER E" NAVAL SHIPYARD — LONG BEACH, CALIF.
	APPROVED W. M. Holm P.E. DATE 5 FEB '63
	for PUBLIC WORKS OFFICER

EXHIBIT B

AOC HIST 1
1963



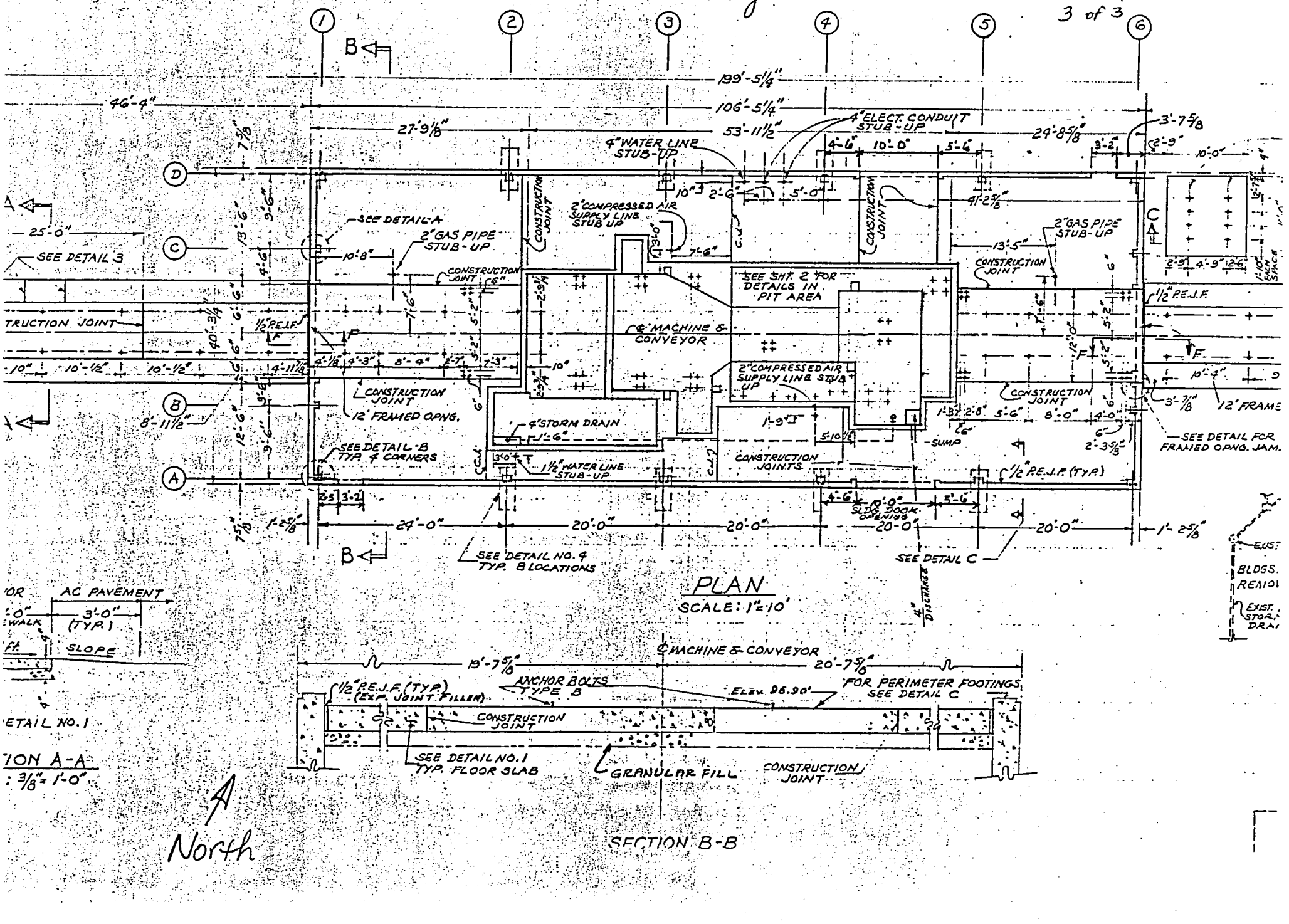
SCALE 1/32" = 1'-0"

BLDG. NO. 109
PAINT SHOP

1965

Bldg 216

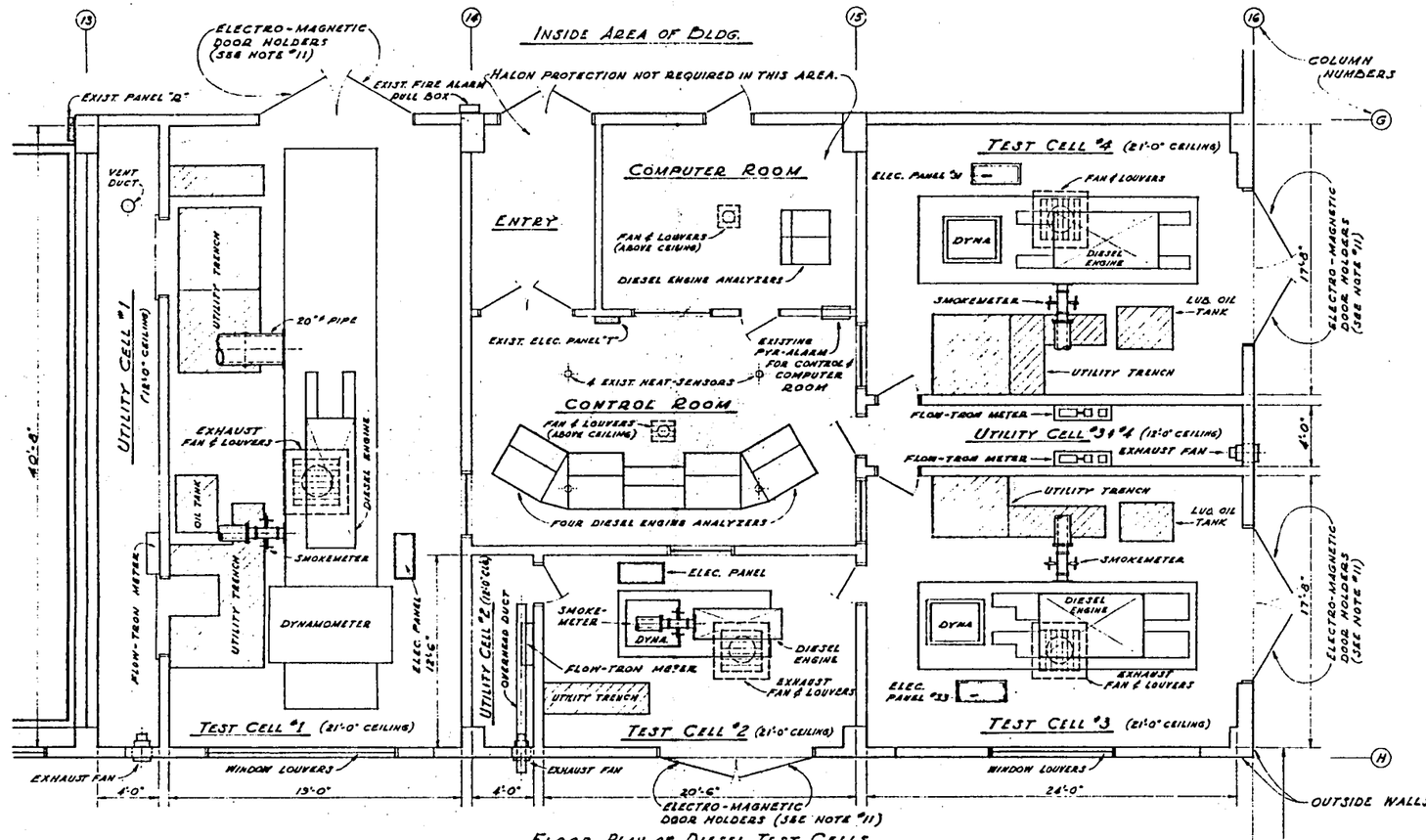
PW DWG 11,995
3 of 3



P.W. DRAWING NO. 11,995 2 of 3	DEPT. OF THE NAVY NAVAL SHIPYARD	NAVAL FACILITIES ENGINEERING COMMAND LONG BEACH, CALIF.
DRAWN BY: R.M.A.	PLATE ABRASIVE BLAST FOUNDATION AND RELATED WORK	
CHECKED BY: D.P.	BLDG. 216 ABRASIVE BLAST FOUNDATION - PLAN	
ENG. BRANCH: D. Powell		
ENG. DIRECTOR: M.A. Flint 1-21-75		
SY4-460, SS-160-74		
APPROVED Stan Wallach DATE 1-24-75 PUBLIC WORKS OFFICER	SIZE D / CODE IDENT NO. 80091	NAVFAC DRAWING NO. 6,033,695
SATISFACTORY TO J.W. Murray DATE 1/15/75		CONSTR. CONTR. NO. N62474-75-C-5039
	SCALE: AS SHOWN / SPEC.	SHEET 3 of 13

MICROFILMED

REVISION			
LTR	DESCRIPTION	DATE	APPROVED



FLOOR PLAN OF DIESEL TEST CELLS
SCALE 1/4"=1'-0"

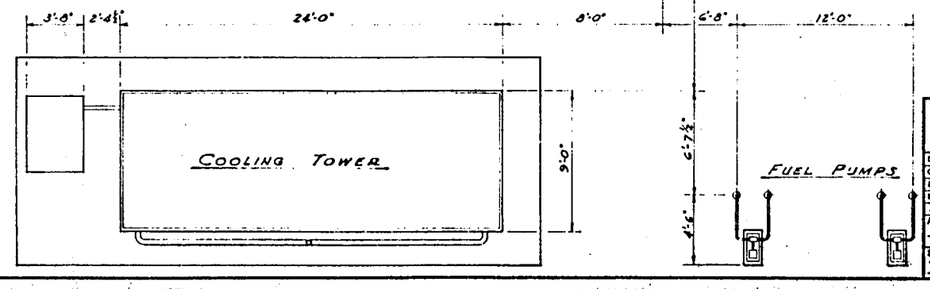
GENERAL NOTES:

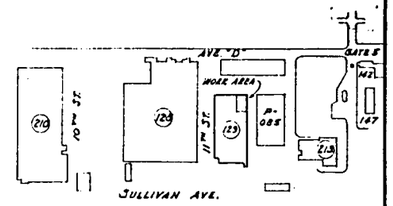
1. PROVIDE TOTAL FLOODING, HALON 1301 FIRE EXTINGUISHING SYSTEM, IN TEST CELL NO'S. 1, 2, 3, & 4, AND ALSO IN UTILITY CELL NO'S. 1, 2, 3 & 4 ONLY.
2. HALON 1301 SYSTEM AND EQUIPMENT TO MEET THE STANDARDS OF THE FOLLOWING AGENCIES: NFPA STANDARDS NO. 12A, UNDERWRITERS' LABORATORIES, FACTORY MUTUAL ENG. CORP. AND ALL APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES.
3. ALL EQUIPMENT AND COMPONENTS OF THE FIRE EXTINGUISHER SYSTEM SYSTEM SHALL BE LOCATED WHERE THEY WILL NOT INTERFERE WITH NORMAL OPERATION OF EXISTING EQUIPMENT AND TEST PROCEDURES OF PERSONNEL TESTING DIESEL ENGINES.
4. IN LOCATING NOZZLES AND FIRE DETECTION DEVICES, AVOID INTERFERENCE WITH OVERHEAD CRANE, CRANE RAILS AND CRANE TRAVEL IN TEST CELLS NO. 1, 3, & 4. IN TEST CELL NO. 2 AVOID AREA IN VICINITY OF MOVABLE 20"ø SMOKE EXHAUSTER PIPE.
5. PROVIDE EMERGENCY MANUAL OPERATION OF FIRE EXTINGUISHING SYSTEM, WHICH IS EASILY ACCESSIBLE AND, LOCATED CLOSE TO VALVES THEY CONTROL.
6. PROVIDE WARNING AND SAFETY ALARMS AS INDICATED IN SPECIFICATIONS.
7. PROVIDE SHUT-DOWN DEVICES OF APPROPRIATE EQUIPMENT AS INDICATED IN THE SPECIFICATIONS. THESE DEVICES SHALL FUNCTION WITH THE OPERATION OF THE FIRE EXTINGUISHING SYSTEM.
8. IDENTIFY ALL VALVES, CONTROLS, EXITS AND RELATED COMPONENTS AS INDICATED IN SPECIFICATIONS.
9. AUTOMATIC DETECTION DEVICES SHALL BE LIMITED TO A COMBINATION OF ANY APPROVED HEAT OR FLAME DETECTION DEVICES SUCH AS "RATE-OF-TEMPERATURE-RISE" AND "PHOTO ELECTRIC FLAME DETECTION" SYSTEMS.
10. PROVIDE FOR UNINTERRUPTED PROTECTION (SEE SPECIFICATIONS UNDER SECTION TITLE HALON 1301 SUPPLY).
11. PROVIDE HARDWARE & INSTALLATION OF ELECTRO-MAGNETIC DOOR HOLDERS WITH MOMENTARY SWITCH FOR MANUAL OPERATION OF DOORS. ENTIRE SYSTEM TO BE CONNECTED SO AS TO CLOSE DOORS AUTOMATICALLY UPON ACTIVATION OF FIRE PROTECTION SYSTEM. (SEE DWG. FOR LOCATIONS).

NOTE:
AN ON-SITE INSPECTION OF DIESEL TEST CELL AREA IS HIGHLY RECOMMENDED PRIOR TO ESTIMATE AND INSTALLATION OF FIRE PROTECTION SYSTEM. SEE SPECIFICATIONS FOR MAKING ARRANGEMENTS.

CONTACT FIRE CHIEF OF NAVAL SUPPORT ACTIVITY FIRE DEPT @ 547-7041 OR 547-7018 FOR KEY AND INFORMATION TO CONNECT NEW FIRE PROTECTION SYSTEM TO EXISTING FIRE ALARM PULL BOX LOCATED AT COLUMN G-16 ON DWG.
UPON MANUAL OR AUTOMATIC ACTIVATION OF NEW FIRE PROTECTION SYSTEM AN ALARM OR INDICATION SHOULD REGISTER ON THE EXISTING MASTER FIRE ALARM CONTROL SYSTEM.

GRAPHIC SCALE
0 1 2
1/4"=1'-0"
1"=320





LOCATION PLAN
SCALE 320'=1'-0"

P.O.M.E. DRAWING NO. 12,167	DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL SHIPYARD LONG BEACH, CALIF.
DRAWN BY: [illegible]	AUTOMATIC FIRE PROTECTION SYSTEM
CHECKED BY: A. ESPINOSA	DIESEL TEST CELL AREA
ENG. BRANCH: [illegible]	BLDG. 129 1ST FLOOR
ENG. DIRECTOR: [illegible] C.E. 5-1970	
SPEC. WRITER: [illegible] DATE 6-1-76	
APPROVED: [illegible] DATE 6-1-76	
SATISFACTORY TO: [illegible] DATE 5-20	SIZE D; CODE IDENT NO. 80091; NAVFAC DRAWING NO. 6,068,867; CONTR. CONTR. NO. N62474-76-C-3824
SCALE: AS NOTED	SPEC. SHEET 1 of 1

12167

AOC Misc 6

REVISIONS				
SYM	DESCRIPTION	PREPD BY	DATE	APPROVED

PLUMBING LEGEND AND ABBREVATIONS

—A—	AIR
—AC—	ACETYLENE
—A.F.—	ACID FILL
—A.R.—	ACID RECLAIM
—C.W.—	COLD WATER
—D—	DRAIN
—G—	NATURAL GAS
—I.W.—	INDUSTRAIL WASTE
—O.F.—	OVER FLOW DRAIN
—P.D.—	PIT DRAIN
—T.D.—	TANK DRAIN
—N_aOH—	N_aOH (SODIUM HYDROXIDE)
---V---	VENT
---V.T.R.---	VENT THRU ROOF
—CH.W.—	CHEMICAL WASTE
—D.I.—	DEIONIZED WATER
—SS—	SANITARY SEWER
—H.W.—	HOT WATER
—o—	TEE OUTLET DOWN
—o—	TEE OUTLET UP
—o—	TURN DOWN
o	TURN UP
—o—	SIDE OUTLET DOWN
—o—	SIDE OUTLET UP
—T—	STRAIGHT TEE
▤ ⊖	FLOOR DRAIN
—⊕—	FLOOR / WALL CLEAN-OUT
—I.C.W.—	INDUSTRIAL COLD WATER
D	DRAIN CONNECTION
W	WASTE
W.C.	WATER CLOSET
W.C.O.	WALL CLEAN- OUT
W.H.	WATER HEATER
F.S.	FIRE SPRINKLER SUPPLY
W.H.A.	WATER - HAMMER ARRESTOR
A.P.	ACCESS PANEL
C.I.	CAST IRON
CU.	COPPER
NI.	NICKEL
CO.T.G.	CO.T.G.
DWG.	DRAWING
E.W.C.	ELECTRIC WATER COOLER
F.C.O.	FLOOR CLEAN-OUT
F.D.	FLOOR DRAIN
L.	LAVATORY
P.O.C.	POINT OF CONNECTION
I.E.	INVERT ELEVATION
S.O.V.	SHUT-OFF VALVE
S/S	SERVICE SINK
U	URINAL
V	VENT
⋈	GATE VALVE
⋈	GLOBE VALVE
⋈	DIAPHRAM VALVE
⋈	3- WAY VALVE
⋈	BALL VALVE
B.F.W.	BACKFLOW PREVENTER
BC	BALANCING COCK

SECTION
SCALE 1/8"=1'-0" (2 / P2 P-2) C-11

PARTIAL PLAN - CHEMICAL HOLDING TANK
NO SCALE (3 / P2 P-2)

PLUMBING PLAN
SCALE 1/8"=1'-0" (1 / P2 P-2) C-10

KEY PLAN

1/8"=1'-0" SCALE

Public Works Engineering
Code 440

0242[illegible]

IF SHEET IS LESS THAN 28" X 40" IT IS A REDUCED PRINT — SCALE REDUCED ACCORDINGLY

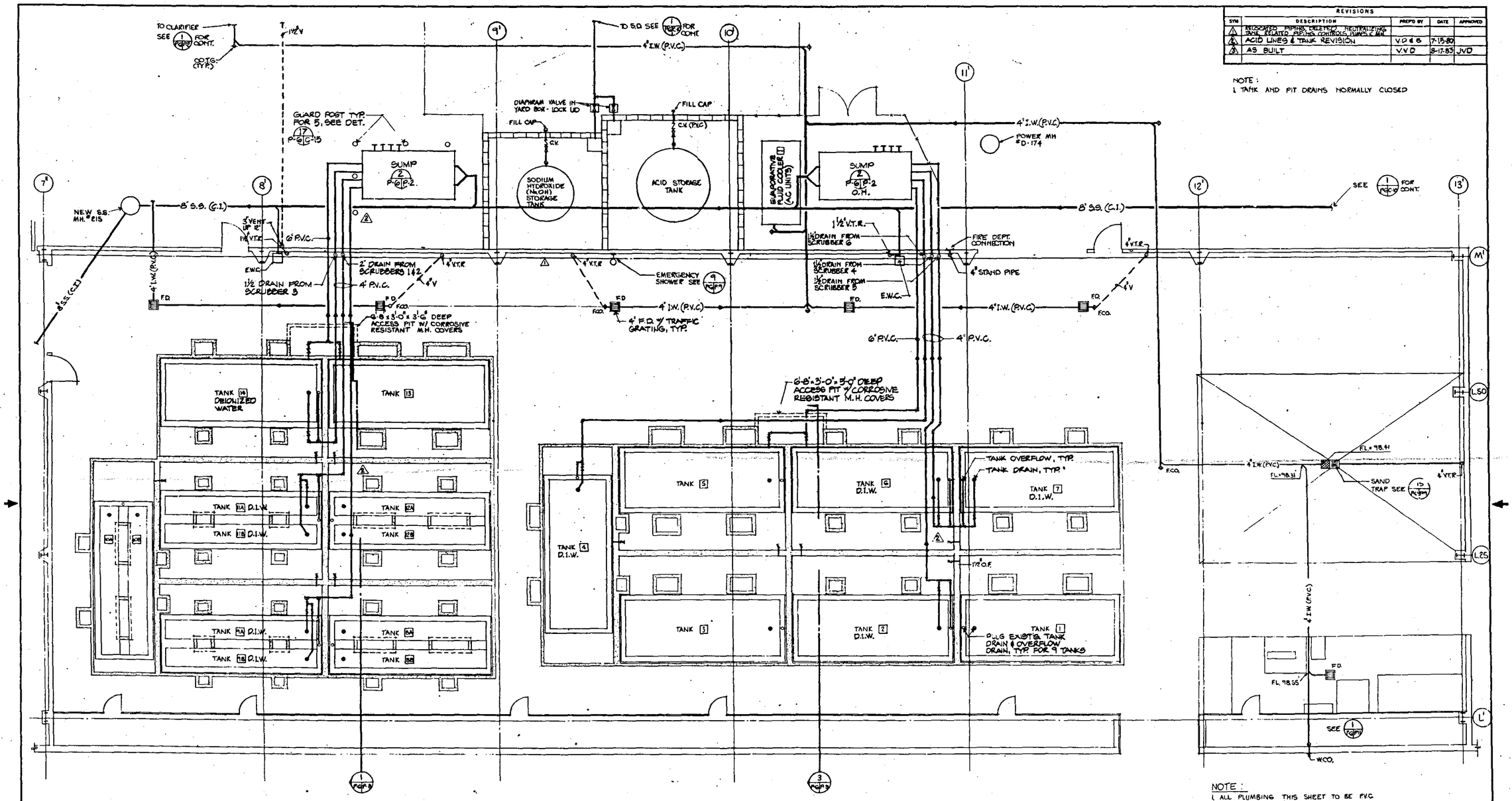
Bldg. 132 AroCs PT 4, Pwrs 5.

P-2

VAN DYKE AND BARNES ARCHITECT - ENGINEERS LOS ANGELES - CALIF.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND WESTERN DIVISION SAN BRUNO, CALIFORNIA
DSGN. C.M. DR. G.H. CHK. W.P. SUPV. L.V.D. CH. ENGR. A.J. SUBMITTED BY DATE 6/27/75 DESIGNER TITLE	LONG BEACH NAVAL SHIPYARD LONG BEACH CALIF. PIPE AND COPPER SHOP P-177
ELEC. M. Ray-Hay FIRE PROT. DIR. BR. HD. J.J. Le DIR. SATISFACTORY TO DATE TITLE	PLUMBING PLAN - SOUTH PORTION
APPROVED DATE FOR COMMANDER NAVFAC 10/29/75	SIZE F; CODE IDENT. NO. 80091; NAVFAC DRAWING NO. 610735; CONST. CONTR. NO. N62474-77-C-2164; SCALE 1/8"=1'-0"; SPEC. 12-77-2164; SHEET 76 OF 115

REVISIONS				
SYM	DESCRIPTION	PREPD BY	DATE	APPROVED
1	RELOCATED PIPING, DELETED NEUTRALIZING TANK RELATED PIPING CONTROLS, PUMPS & MH			
2	ACID LINES & TANK REVISION	V.D & S	7-15-80	
3	AS BUILT	V.V.D	8-17-83	JVD

NOTE :
1 TANK AND PIT DRAINS NORMALLY CLOSED



NOTE :
1 ALL PLUMBING THIS SHEET TO BE PVC. SCHED. 80 EXCEPT AS NOTED.
2 LABEL ALL VALVES

ACID TANKS - DRAINAGE PLAN
SCALE 1/4" = 1'-0"
1 P2/P6 FIN

SEE SHEET P2 FOR LEGEND

1/4" = 1'-0" SCALE 0 1 2 4 8 12 FEET

FILED
78 of 115

IF SHEET IS LESS THAN 28" X 40" IT IS A REDUCED PRINT — SCALE REDUCED ACCORDINGLY

P-6

VAN OTKE AND BARNES ARCHITECT – ENGINEERS LOS ANGELES – CALIF.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND WESTERN DIVISION SAN BRUNO, CALIFORNIA
DSGN'D BY	DR. CH.	CHK. W.D.	LONG BEACH NAVAL SHIPYARD, LONG BEACH CALIF.
SUPV.	CH. ENGR.	
SUBMITTED BY	DATE	PIPE AND COPPER SHOP P-177
ELECTRICAL	FIRE PROT.	ACID TANKS - DRAINAGE PLAN
BR. HD.	DIR.	
SATISFACTORY TO	DATE	SIZE F; CODE IDENT. NO. 80091; NAVFAC DRAWING NO. 6102939
TITLE		CONST. CONTR. NO. N62474- 77 -C- 2164
APPROVED	DATE	SCALE 1/4" = 1'-0"; SPEC. 12-77-2164; SHEET 80 OF 115
FOR CONSTRUCTION	10/29/82	

24,245

24245

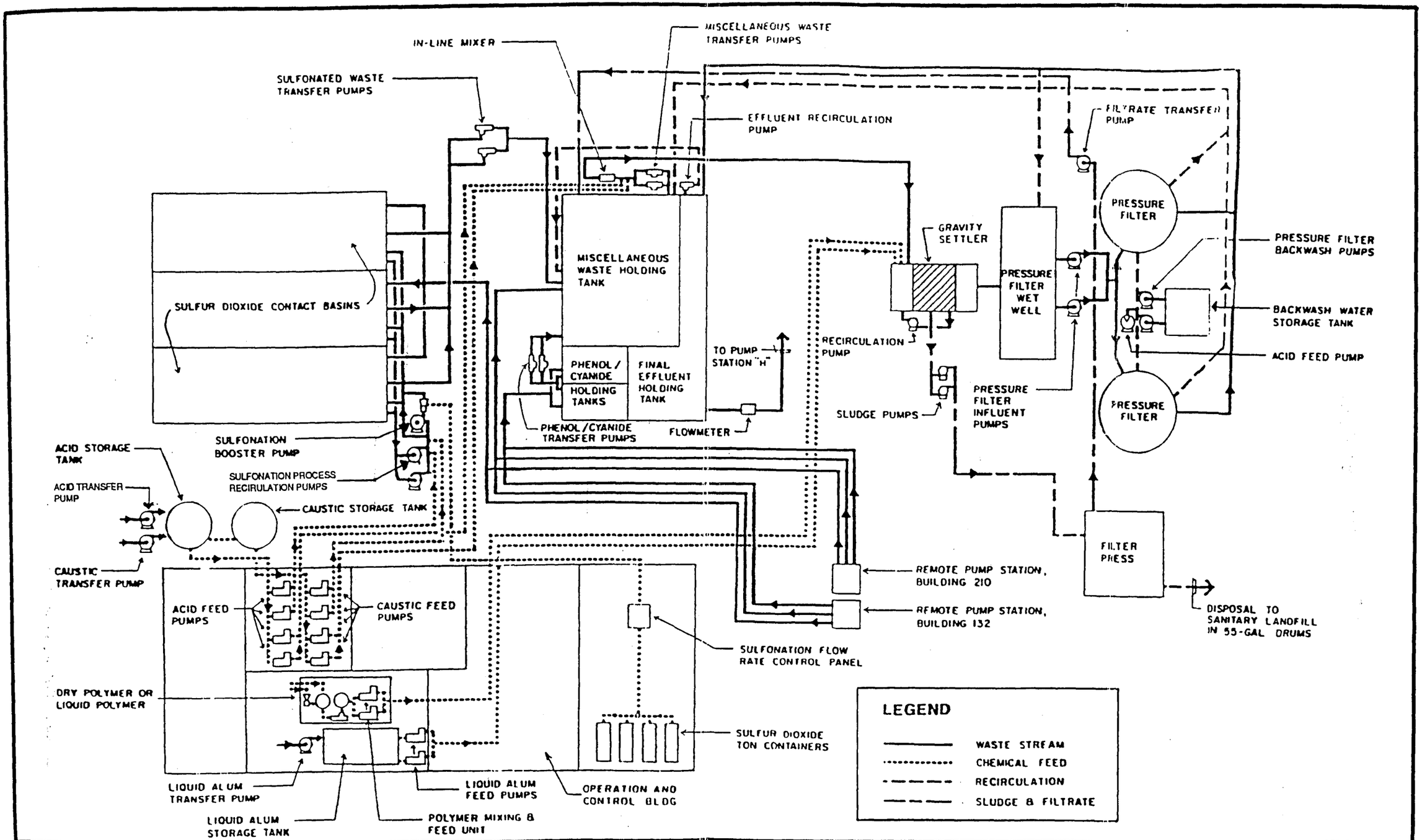
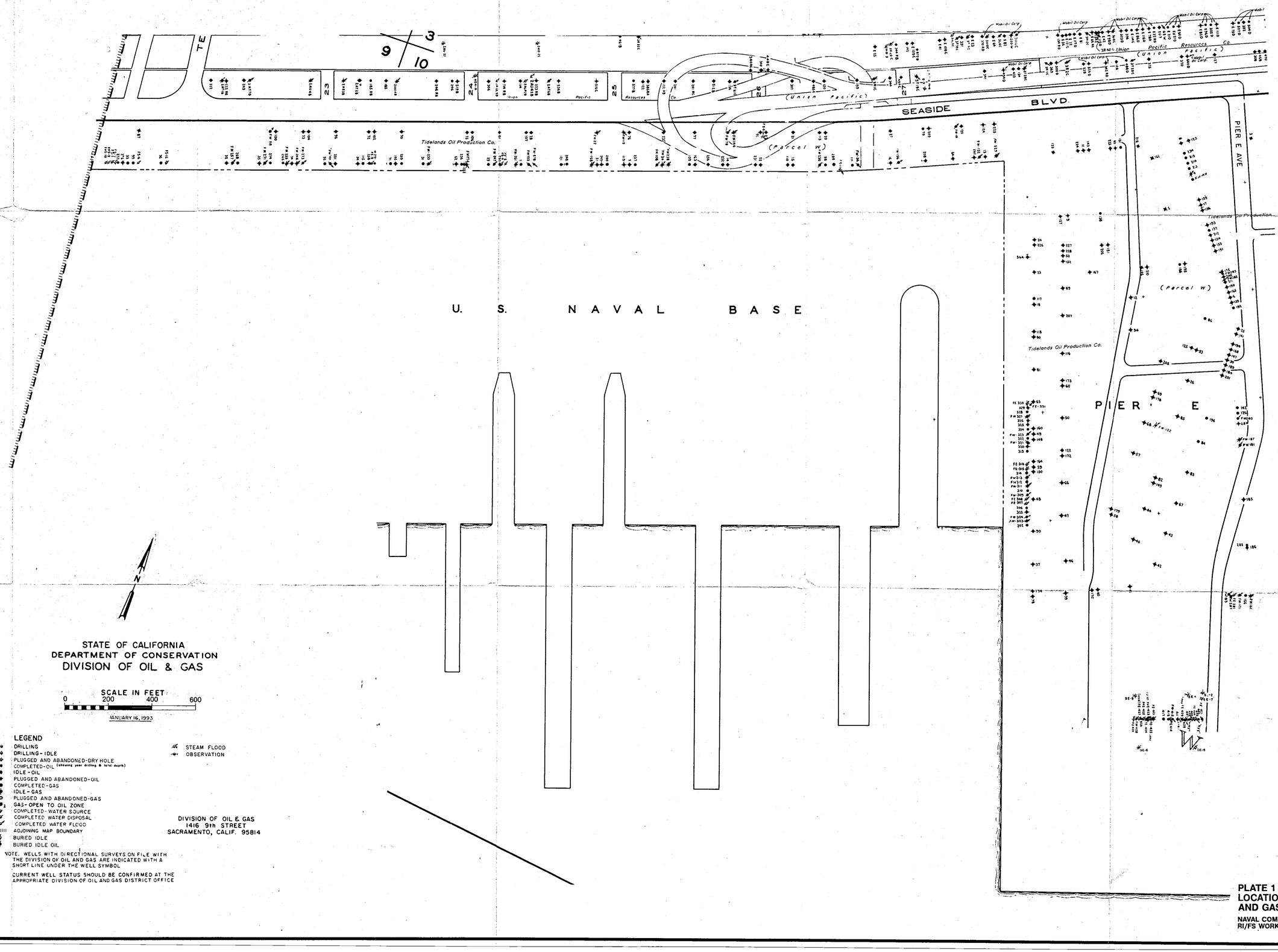


Figure 12.1. Industrial Wastewater Treatment Facility (IWTF) flow process diagram.



STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL & GAS

SCALE IN FEET
0 200 400 600

JANUARY 16, 1993

LEGEND

- DRILLING
- DRILLING - IDLE
- PLUGGED AND ABANDONED-DRY HOLE
- COMPLETED-OIL (showing year drilling & total depth) 76-2613
- IDLE - OIL
- PLUGGED AND ABANDONED-OIL
- COMPLETED-GAS
- IDLE - GAS
- PLUGGED AND ABANDONED-GAS
- GAS - OPEN TO OIL ZONE
- COMPLETED - WATER SOURCE
- COMPLETED WATER DISPOSAL
- COMPLETED WATER FLOOD
- ADJOINING MAP BOUNDARY
- BURIED IDLE
- BURIED IDLE OIL
- STEAM FLOOD
- OBSERVATION

NOTE. WELLS WITH DIRECTIONAL SURVEYS ON FILE WITH THE DIVISION OF OIL AND GAS ARE INDICATED WITH A SHORT LINE UNDER THE WELL SYMBOL

CURRENT WELL STATUS SHOULD BE CONFIRMED AT THE APPROPRIATE DIVISION OF OIL AND GAS DISTRICT OFFICE

DIVISION OF OIL & GAS
1416 9th STREET
SACRAMENTO, CALIF. 95814

PLATE 1
LOCATION OF AREA OIL AND GAS WELLS (MAP 128)
NAVAL COMPLEX LONG BEACH
RI/FS WORK PLAN

New 6" PVC sewer-PPG (below grade).

See bottom tank connection detail on sheet 2.

PROCESSED EFFLUENT TANK

6" elev. @ centerline. Pipe is secured to wall.

3'-6" elev. @ centerline. Pipe is secured to wall.

Pump & sump line connection detail shown on sheet 2.

SEE DETAIL 1

SEE DETAIL 4

11 7/8" elev. @ centerline.

SWING GATE (by LBNS)

1" sch. 80 PVC

1" sch. 80 PVC

See sludge tank connection detail on sheet 4

EXISTING TRUCK RAMP

SLOPE

2.5' diam., 2.5' high on a 2' stand

NaOH

Clean out

Clean out

See Detail 3

See sump line detail on sheet 3

OWS 5'-6"x 16'

IAF 7'-6"x 13.5'

SLUDGE 7' dia., 6' high on 3' stand

FILTER PRESS

2" suction hose

4.5' diam., 5' high on a 2' stand

ECA 1350

6" elev. @ centerline reducer bushing 6"x4"

1'-2 5/8" elev. @ centerline the inlet is 4" diam.

2'-6 3/8" elev. @ centerline. The outlet is 4" diam.

SLOP OIL 10' dia, 18' high

SLOP OIL 10' dia, 18' high

2" female coupler quick disconnect

3" in-line flow meter w/ 150" flange connectors.

EMERGENCY SHOWER(PROVIDED BY LBNS)

STANDARD HOSE BIB

4" gate valve w/flange (typ) installed by LBNS.

1 1/2" Copper line

1 1/2" VALVE AND 1 1/2" NPT MALE END

2" discharge hose

SEE DETAIL 2

2" POTABLE WATER SERVICE W/BACK-FLOW PREVENTER

TO OW/WO TREATMENT SYSTEM

3" DIAM. RUBBER DISCHARGE HOSE ENCASED WITH LAYFLAT HOSELINE (BY NFESC).

EDGE OF YO BARGE

PORT

SEE PUMP SKID DWG.

DRAINAGE HOLE 1" DIAM. BY LBNS

TANK 4

TANK 3

TANK 2

EXISTING MANHOLES

3"DIAM. SS VALVE

3" DIAM. SS PIPE

EXISTING VALVES OPERATORS

6" CONTAINMENT SKIRT

SENSORS

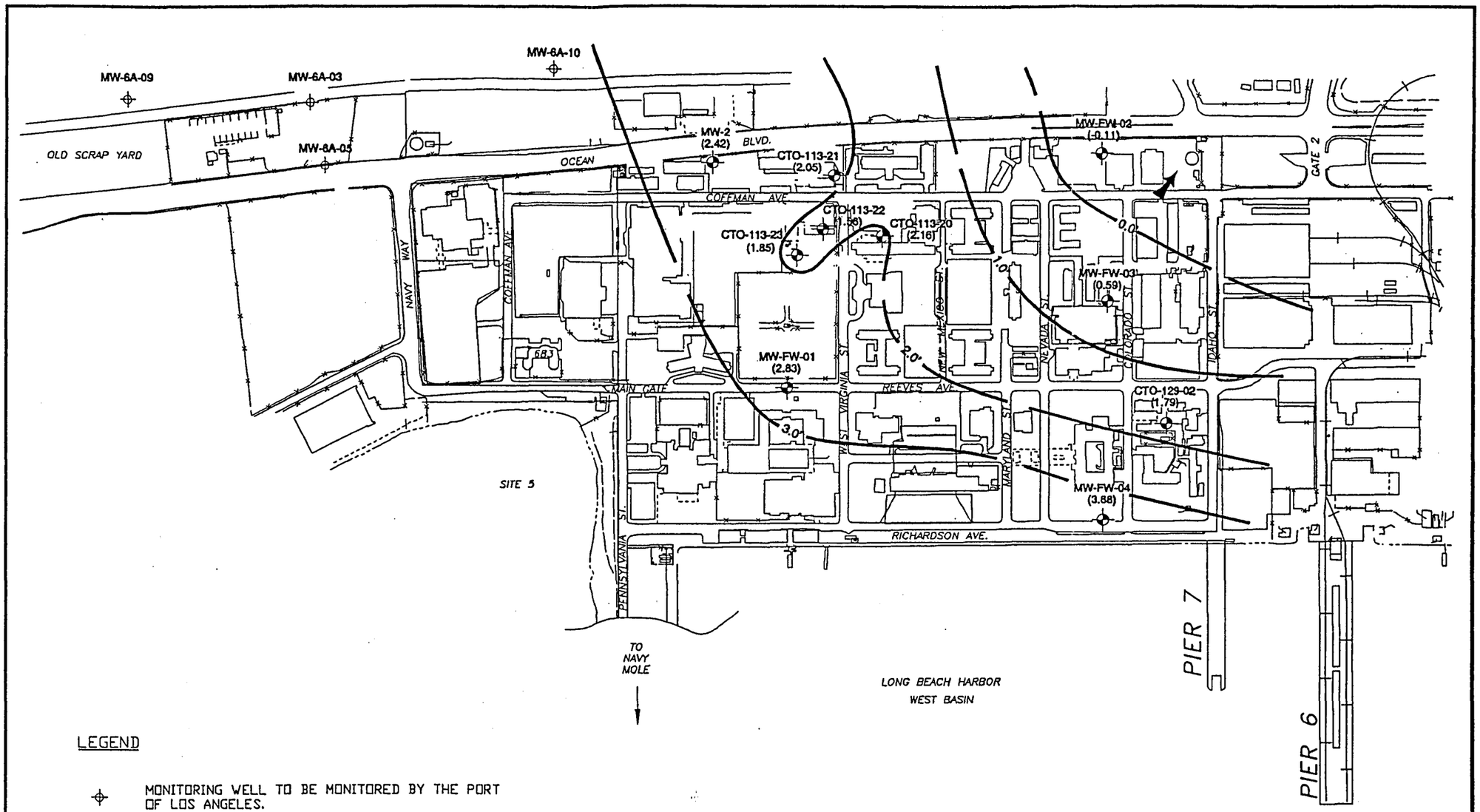
TANK 4

TANK 3

TANK 2

BOWTS - AOC IWS 3
Circa 1994

QUANTITY FOR EACH ASSEMBLY	ITEM NO.	PART NO.



LEGEND

- MONITORING WELL TO BE MONITORED BY THE PORT OF LOS ANGELES.
- MONITORING WELL (MW)
- (3.24) WATER TABLE ELEVATION (IN FEET) RELATIVE TO MEAN LOWER LOW WATER (MLLW) DATUM. DEPTHS TO GROUNDWATER MEASURED ON 9 SEPTEMBER 1998.
- 0.0 WATER TABLE ELEVATION (IN FEET) CONTOUR LINE. CONTOUR INTERVAL - 1 FOOT. DASHED WHERE INFERED.
- APPARENT WATER TABLE FLOW DIRECTION.

N

0 500 1000 1500

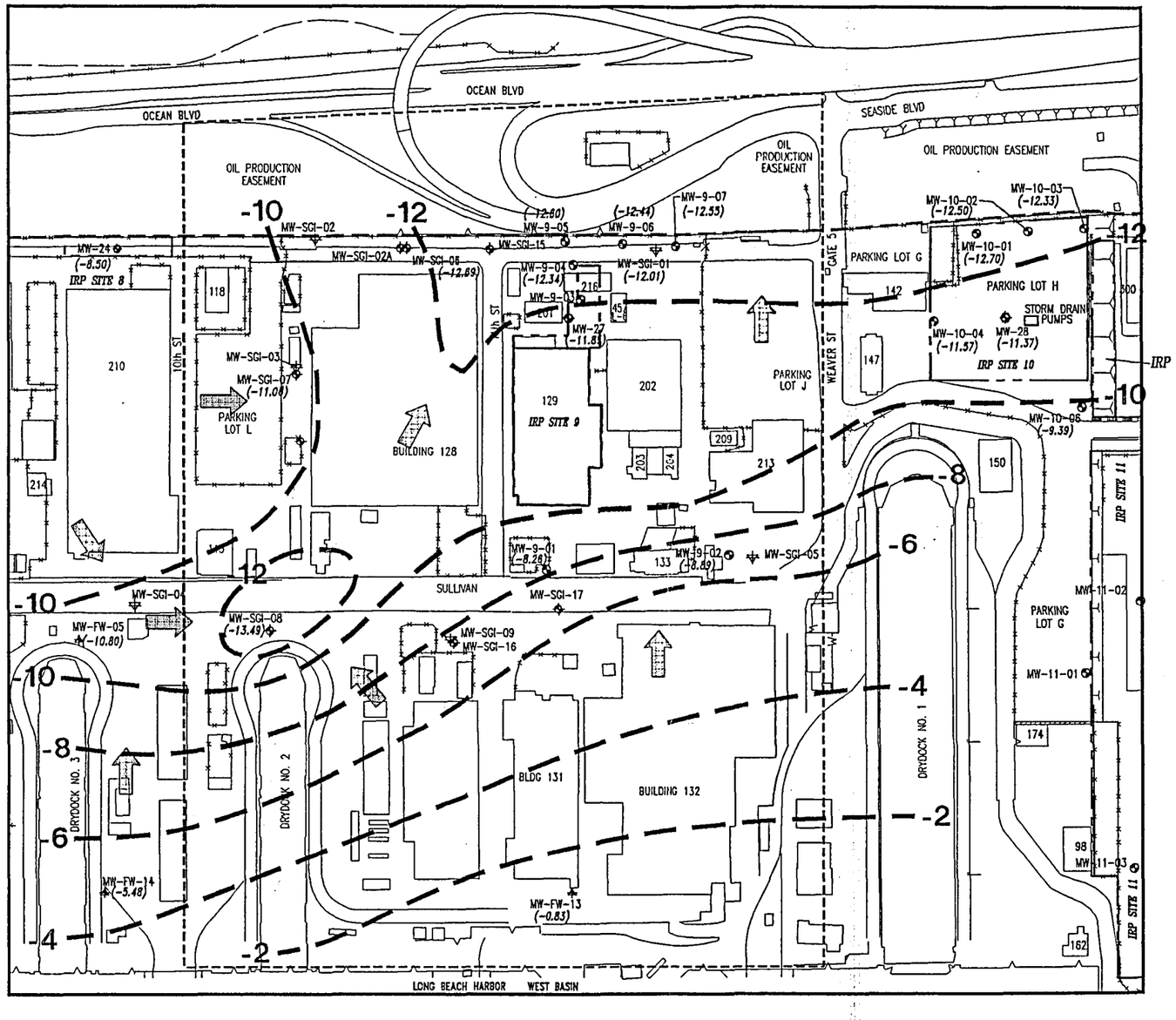
APPROXIMATE SCALE IN FEET

FIGURE 2-1
WATER TABLE ELEVATION CONTOUR MAP (SEPTEMBER 1998)
MAIN STATION MONITORING WELLS
FIRST BIANNUAL GROUNDWATER MONITORING REPORT

FORMER NAVAL STATION LONG BEACH

CDM Federal Programs Corporation
A Subsidiary Of Camp Dresser & McKee Inc.

DATE: MARCH 1999
FILE NO.: 020_2-1C
DO NO.: 6210-020



EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996a)
- SITE INSPECTION (JEG 1992b)

STILLING WELL
- ◇ THIS INVESTIGATION

HYDROGEOLOGIC SYMBOLS:

-2 APPROXIMATE LOCATION OF GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO MLLW (CONTOUR INTERVAL 2 FEET)

(-10.58) GROUNDWATER ELEVATION (IN FEET RELATIVE TO MLLW)

INFERRED DIRECTION OF GROUNDWATER FLOW

TOPOGRAPHIC SYMBOLS:

- IRP SITE BOUNDARY
- WORK PLAN STUDY BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (LBNSY BUILDING DESIGNATION)

NOTES:

1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. SOURCE OF PREVIOUS MONITORING WELL LOCATIONS FINAL RI REPORT (BNI 1997a).

0 300 600

APPROXIMATE SCALE IN FEET

SGI REPORT
FIGURE 3-30
GROUNDWATER LEVELS IN UPPER INTERVAL
IN THE VICINITY OF IRP SITE 9
29 OCTOBER 1997 0800 TO 0930 MONITORING EVENT

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 01/18/99
FILE NO.: 123-107.DWG
JOB NO.: 22214-123

HP-SGI-08

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	1.5		13'-15'
1,1-DICHLOROETHENE	**16**		
1,2-DICHLOROETHENE (TOTAL)	2.2		
1,4-DICHLOROBENZENE	0.3	J	
ACETONE	10	J	
BENZENE	0.7	J	
TRICHLOROETHENE	0.3	J	
CARBON DISULFIDE	0.3	J	35.0'-38'

HP-9-37

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	13		9.0'-12.0'
1,1-DICHLOROETHENE	**2**	J	
1,2-DICHLOROETHENE (TOTAL)	7	J	
VINYL CHLORIDE	**5**	J	
ALL OTHER COMPOUNDS NON-DETECT			
1,1-DICHLOROETHANE	6	J	38.0'-41.0'
1,2-DICHLOROETHENE (TOTAL)	1	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-9-01

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-12.0'
ALL COMPOUNDS NON-DETECT			34.0'-37.0'

HP-9-05

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	150		9.0'-12.0'
1,2-DICHLOROETHENE (TOTAL)	160		
TETRACHLOROETHENE	**19**		
TRICHLOROETHENE	**62**		
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

MW-9-05

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	43		5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	140		
TETRACHLOROETHENE	4	J,J,_	
TRICHLOROETHENE	17		
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

MW-9-04

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	15		5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	100		
TETRACHLOROETHENE	**14**		
TRICHLOROETHENE	**80**		
ALL OTHER COMPOUNDS NON-DETECT			
1,1-DICHLOROETHANE	17		5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	96		
TETRACHLOROETHENE	**14**		
TRICHLOROETHENE	**92**		
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-07

ANALYTE	CONC.	Q	DEPTH
ACETONE	99	J	36.0'-39.0'

MW-SGI-15

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.2	J	5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	0.5		
CHLOROMETHANE	0.2	J	
TRICHLOROETHENE	0.4	J	
VINYL CHLORIDE	0.1	J	

HP-9-33

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			42.0'-45.0'

HP-9-26

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			40.0'-45.0'

MW-27

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	1	J	9.2'-19.2'
1,2-DICHLOROETHENE (TOTAL)	17		
TETRACHLOROETHENE	2	J	
TRICHLOROETHENE	6	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-38

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	0.4	J	9.0'-12.0'
ACETONE	260		
1,1-DICHLOROETHENE	1.1		
CARBON DISULFIDE	0.5		
1,2-DICHLOROETHENE (TOTAL)	73		
1,1-DICHLOROETHANE	9.3		
BENZENE	1		
TRICHLOROETHENE	**59**		
1,2-DICHLOROPROPANE	0.2	J	
1,1,2-TRICHLOROETHANE	0.3	J	
TETRACHLOROETHENE	**43**		

MW-SGI-07

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	0.3	J	10.3'-20'
1,1-DICHLOROETHENE	**10**		
1,2-DICHLOROETHENE (TOTAL)	8		
1,1-DICHLOROETHANE	8.5		
1,1,1-TRICHLOROETHANE	0.3	J	
1,4-DICHLOROBENZENE	0.1	J	
TRICHLOROETHENE	5.2		
TETRACHLOROETHENE	4.7		

MW-SGI-06

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	0.3	J	5.0'-20.0'
1,1-DICHLOROETHENE	0.8		
1,2-DICHLOROETHENE (TOTAL)	2		
1,1-DICHLOROETHANE	1.4		
1,1,1-TRICHLOROETHANE	0.4	J	
BENZENE	0.2	J	
TRICHLOROETHENE	1.2		
1,2-DICHLOROPROPANE	0.08	J	
TETRACHLOROETHENE	2.8		
1,4-DICHLOROBENZENE	0.08	J	

HP-9-27

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			47.0'-50.0'

HP-9-02

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-12.0'
ALL COMPOUNDS NON-DETECT			34.0'-37.0'

MW-9-06

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHENE	**2**	J	5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	180		
TRICHLOROETHENE	**75**		
ALL OTHER COMPOUNDS NON-DETECT			

HP-9-22

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	8	J	9.0'-12.0'
1,1-DICHLOROETHENE	**8**	J	
1,2-DICHLOROETHENE (TOTAL)	12		
TETRACHLOROETHENE	6	J	
TRICHLOROETHENE	5	J	
VINYL CHLORIDE	**2**	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-04

ANALYTE	CONC.	Q	DEPTH
1,1,-DICHLOROETHENE	0.3	J	10.0'-13.0'
1,1,-DICHLOROETHANE	0.1	J	
1,1,1-TRICHLOROETHANE	2.8		
ACETONE	2	J	
TETRACHLOROETHENE	0.4	J	
ALL COMPOUNDS NON-DETECT			36.5'-39.0'

HP-SGI-05

ANALYTE	CONC.	Q	DEPTH
CHLOROMETHANE	0.08	J	10.0'-13.0'
1,1,-DICHLOROETHANE	0.1	J	
1,1,1-TRICHLOROETHANE	1.6		
TRICHLOROETHENE	0.1	J	
METHYL TERT-BUTYL ETHER	2	J	
TETRACHLOROETHENE	0.9		

HP-SGI-06

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	**4.5**	J	9.0'-12.0'
ACETONE	6	J	
1,2-DICHLOROETHENE (TOTAL)	3.6	J	
1,1,-DICHLOROETHANE	1.7	J	
BENZENE	0.2	J	
TRICHLOROETHENE	0.3	J	
TOLUENE	0.1	J	

HP-9-03

ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	4	J	9.0'-12.0'
TRICHLOROETHENE	7	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-9-29

ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	2	J	10.0'-13.0'
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			30.0'-33.0'

HP-9-28

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			10.0'-13.0'
ALL COMPOUNDS NON-DETECT			30.0'-37.0'

HP-SGI-31

ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	8.1		10.0'-13.0'
1,1-DICHLOROETHANE	0.2	J	
BENZENE	0.3	J	
TRICHLOROETHENE	0.2	J	
TETRACHLOROETHENE	0.2	J	

HP-9-25

VOCs

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-12.0'
ALL COMPOUNDS NON-DETECT			27.0'-30.0'

MW-9-07

ANALYTE	CONC.	Q	DEPTH
BNI 1997			
1,2-DICHLOROETHENE (TOTAL)	2	J	5.0'-20.0'
ALL OTHER COMPOUNDS NON-DETECT			
CURRENT INVESTIGATION			
VINYL CHLORIDE	0.3	J	5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	1.7		
1,1-DICHLOROETHANE	0.2	J	

HP-SGI-60

ANALYTE	CONC.	Q	DEPTH
ACETONE	47		33.5'-36'
BENZENE	**15**		
CARBON DISULFIDE	0.4	J	
CHLOROMETHANE	0.08	J	
METHYL TERT-BUTYL ETHER	1	J	
TOLUENE	0.2	J	
XYLENE (TOTAL)	0.2	J	

MW-SGI-14

ANALYTE	CONC.	Q	DEPTH
1,1,1-TRICHLOROETHANE	0.09	J	5.0'-11.0'
1,1-DICHLOROETHANE	0.8		
1,2-DICHLOROETHENE (TOTAL)	15		
BENZENE	0.08	J	
CARBON DISULFIDE	0.3	J	
CHLOROMETHANE	0.3	J	
TETRACHLOROETHENE	9.3		
TRICHLOROETHENE	5.2		
VINYL CHLORIDE	0.09	J	

HP-9-24

ANALYTE	CONC.	Q	DEPTH
BENZENE	**1100**		9.0'-12.0'
ETHYLBENZENE	450		
TOLUENE	13	J	
ALL OTHER COMPOUNDS NON-DETECT			
BENZENE	1	J	35.0'-38.0'
ETHYLBENZENE	2	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-9-39

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-12.0'
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

HP-SGI-01

ANALYTE	CONC.	Q	DEPTH
ACETONE	20		10.0'-13.0'
CARBON DISULFIDE	1.2		
2-BUTANONE (MEK)	3	J	
1,2-DICHLOROETHANE	0.2	J	
BENZENE	0.2	J	
TOLUENE	1		
METHYL TERT-BUTYL ETHER	8,600		
CHLOROBENZENE	0.6		
ETHYLBENZENE	0.4	J	
XYLENES TOTAL	0.5		
ISOPROPYLBENZENE (CUMENE)	10		
N-PROPYLBENZENE	0.8	J	
SEC-BUTYLBENZENE	0.3	J	
CARBON DISULFIDE	0.2	J	36.5'-39.0'

HP-SGI-02

ANALYTE	CONC.	Q	DEPTH
ACETONE	5	J	9.0'-12.0'
CARBON DISULFIDE	0.4	J	
1,2-DICHLOROETHANE	0.1	J	
BENZENE	0.08	J	
ALL COMPOUNDS NON-DETECT			36.5'-39.0'

HP-9-35

ANALYTE	CONC.	Q	DEPTH
CHLOROFORM	2	J	9.0'-12.0'
ALL OTHER COMPOUNDS NON-DETECT			
CHLOROFORM	2	J	35.0'-38.0'
ALL OTHER COMPOUNDS NON-DETECT			

HP-9-06

ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	11		9.0'-12.0'
2-BUTANONE (MEK)	16		
TRICHLOROETHENE	24		
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

HP-SGI-10

ANALYTE	CONC.	Q	DEPTH
2-BUTANONE (MEK)	3	J	37.5'-39'
BENZENE	0.2	J	
CARBON DISULFIDE	0.9	J	
TOLUENE	0.1	J	

MW-9-03

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	5	J	5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	40		
TETRACHLOROETHENE	**33**		
TRICHLOROETHENE	**120**		
ALL OTHER COMPOUNDS NON-DETECT			

SP-9-04

ANALYTE	CONC.	Q	DEPTH
BENZENE	**840**		13.0'-15.0'
ETHYLBENZENE	790		
XYLENE (TOTAL)	61	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-33

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	**0.8**		9.0'-12.0'
CARBON DISULFIDE	0.5	J	
1,2-DICHLOROETHENE (TOTAL)	1.5		
1,1-DICHLOROETHANE	3.2		
BENZENE	0.2	J	
TRICHLOROETHENE	0.2	J	
1,2-DICHLOROPROPANE	0.09	J	
TOLUENE	0.1	J	

HP-SGI-30

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	0.4	J	10.0'-13.0'
CARBON DISULFIDE	1.6		
1,2-DICHLOROETHENE (TOTAL)	8.8		
1,1-DICHLOROETHANE	0.07	J	
BENZENE	0.3	J	
TRICHLOROETHENE	0.7		
TOLUENE	0.2	J	
TETRACHLOROETHENE	0.5	J	

HP-9-10

ANALYTE	CONC.		
1,2-DICHLOROETHENE (TOTAL)	290		9.0'-12.0'
TRICHLOROETHENE	**140**		
VINYL CHLORIDE	**6**	J	
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

HP-SGI-11

ANALYTE	CONC.	Q	DEPTH
CARBON DISULFIDE	0.4		36.5'-39.0'

HP-9-36

ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	7	J	12.0'-15.0'
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			34.0'-37.0'

SP-9-13

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-11.0'

HP-SGI-37

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	6.5		13'-15'
1,2-DICHLOROETHANE	0.2	J	
1,2-DICHLOROETHENE (TOTAL)	5		
BENZENE	0.08	J	
CARBON DISULFIDE	0.7		
TRICHLOROETHENE	0.2	J	

MW-9-02

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			5.0'-17.0'

HP-SGI-36

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	13		13'-15'
1,2-DICHLOROETHANE	0.3	J	
1,2-DICHLOROETHENE (TOTAL)	1.5		
1,2-DICHLOROPROPANE	0.1	J	
BENZENE	0.07	J	
TRICHLOROETHENE	0.05	J	
BENZENE	0.09	J	34'-36'
CARBON DISULFIDE	0.7		
TOLUENE	0.06	J	

HP-SGI-12

ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			9.0'-12.0'
CARBON DISULFIDE	0.8		38'-41'
1,2-DICHLOROETHENE (TOTAL)	2.4		
2-BUTANONE (MEK)	4	J	
BENZENE	0.1	J	
TOLUENE	0.1	J	

HP-SGI-29

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.4	J	13'-15'
1,1-DICHLOROETHENE	0.2	J	
1,2-DICHLOROETHENE (TOTAL)	29		
BENZENE	0.07	J	
TRICHLOROETHENE	0.8		
VINYL CHLORIDE	**2.2**		

HP-9-20

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	9	J	10.0'-15.0'
1,2-DICHLOROETHENE (TOTAL)	4	J	
VINYL CHLORIDE	**4**	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-32

ANALYTE	CONC.	Q	DEPTH
VINYL CHLORIDE	0.4	J	10.5'-13.5'
1,1-DICHLOROETHENE	0.4	J	
CARBON DISULFIDE	0.4	J	
1,2-DICHLOROETHENE (TOTAL)	19		
1,1-DICHLOROETHANE	4.4		
1,2-DICHLOROETHANE	0.09	J	
BENZENE	0.1	J	
TRICHLOROETHENE	3.5		
TOLUENE	0.07	J	
TETRACHLOROETHENE	0.2	J	
NAPHTHALENE	0.2	J	

HP-9-21

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	8	J	10.0'-15.0'
1,2-DICHLOROETHENE (TOTAL)	7	J	
TRICHLOROETHENE	1	J	
ALL OTHER COMPOUNDS NON-DETECT			

HP-SGI-09

VOCs

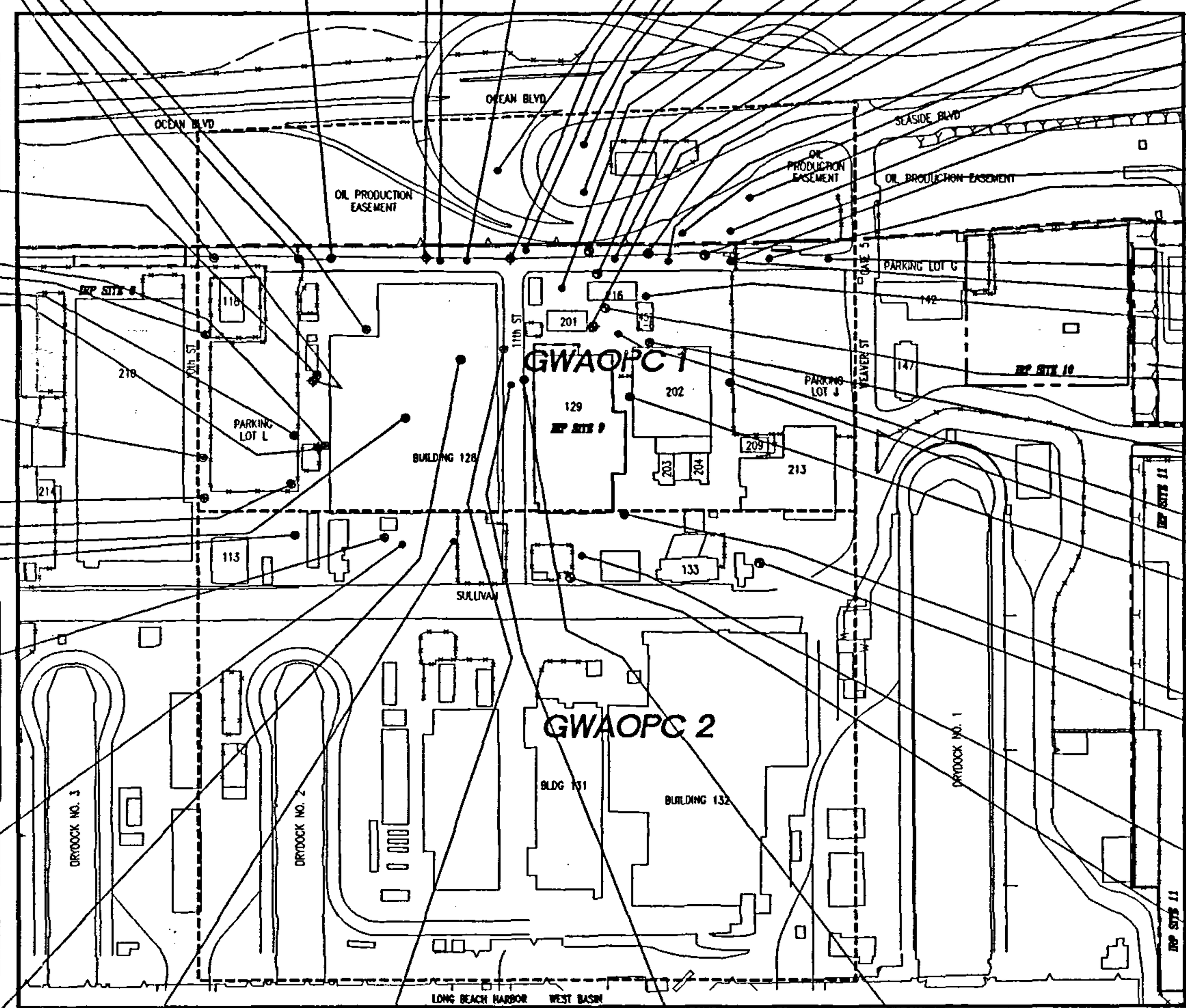
ANALYTE	CONC.	Q	DEPTH
CARBON DISULFIDE	1.4		10.5'-13.5'
1,2-DICHLOROETHENE (TOTAL)	1.0		
1,1-DICHLOROETHANE	0.5		
BENZENE	0.2	J	
TOLUENE	0.1	J	
METHYL TERT-BUTYL ETHER	0.5	J	
2-BUTANONE (MEK)	4	J	38.0'-41.0'
CHLOROFORM	0.05	J	
BENZENE	0.1	J	
TOLUENE	0.09	J	

HP-9-18

ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	560		9.0'-12.0'
1,1-DICHLOROETHENE	**170**		
1,2-DICHLOROETHENE (TOTAL)	30	J	
VINYL CHLORIDE	**28**	J	
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			35.0'-38.0'

MW-9-01

ANALYTE	CONC.	Q	DEPTH
BNI 1997			
1,1-DICHLOROETHANE	8	J	5.0'-20.0'
1,1-DICHLOROETHENE	1	J	
1,2-DICHLOROETHENE (TOTAL)	58		
ALL OTHER COMPOUNDS NON-DETECT			
CURRENT INVESTIGATION			
1,1,1-TRICHLOROETHANE	0.1	J	5.0'-20.0'
1,1-DICHLOROETHANE	2.4		
1,2-DICHLOROETHENE (TOTAL)	25		
BENZENE	0.07	J	
CHLOROFORM	0.5		
TETRACHLOROETHENE	0.2	J	
TRICHLOROETHENE	0.2	J	
VINYL CHLORIDE	**2.3**		



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EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996)
- SITE INSPECTION (JEG 1992)

HYDROPUNCH (HP)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

CONE PENETROMETER TEST SOUNDING (CPT)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

PIEZOMETER (HP) OR TEMPORARY DEEP WELL POINT (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

(ug/L) CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

GWAOPC 2 APPROXIMATE LIMITS OF GWAOPC

GROUNDWATER SAMPLE LOCATION (E.G. HYDROPUNCH LOCATION) WITH ANALYTES DETECTED, ANALYTE CONCENTRATION, QUALIFIERS AND SAMPLE/SCREEN INTERVAL. **BOLD** TEXT INDICATES THE CHEMICAL EXCEEDS THE SCREENING CRITERIA LISTED ON TABLE 4-1.

SAMPLE DESIGNATION — HP-SGI-08

ANALYTE	CONC.	Q	DEPTH
		X	

RESULTS *(ug/L)* (UNLESS NOTED) — CONC.; QUALIFIER — Q; SAMPLE/SCREEN INTERVAL — DEPTH

- SGI WORK PLAN STUDY BOUNDARY
- 2 IRP SITE BOUNDARY
- LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE *(LBNSY BUILDING DESIGNATION)*

NOTES:
1. SITE MAP ORIGINATED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV. 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE SHOWN IN REFERENCE TO THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" (NAVFAC DWG NO. 6117951).
3. SOURCE OF EXISTING EXPLORATION POINTS: DRAFT RI REPORT (BNI 1996b).

0 300 600
APPROXIMATE SCALE IN FEET

SGI REPORT
FIGURE 5-4
VOCs DETECTED IN THE GROUNDWATER OF THE UPPER INTERVAL (0-40 FEET BGS) IN THE VICINITY OF IRP SITE 9 (NORTH OF SULLIVAN AVENUE)

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 8/13/98
FILE NO.: 123-084.DWG
JOB NO.: 22214-123

HP-SGI-34			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	14		14'-16'
1,1-DICHLOROETHENE	0.5	J	
1,2-DICHLOROETHENE (TOTAL)	89		
BENZENE	1.4	J	
CARBON DISULFIDE	0.5		
DICHLORODIFLUOROMETHANE	0.8		
TOLUENE	0.1	J	
TRICHLOROETHENE	5.9	J	
VINYL CHLORIDE	**9.8**	J	

MW-SGI-16			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	510		5.0'-25.0'
1,1-DICHLOROETHENE	**180**		
1,2-DICHLOROETHANE	2.3		
1,2-DICHLOROETHENE (TOTAL)	720		
1,2-DICHLOROPROPANE	0.06	J	
BENZENE	**7.3**		
CARBON DISULFIDE	0.3	J	
CHLOROETHANE	2.7		
CHLOROMETHANE	0.4	J	
NAPHTHALENE	0.3	J	
TRICHLOROETHENE	11		
VINYL CHLORIDE	**34**		

HP-SGI-28			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	83		11'-13'
1,1-DICHLOROETHENE	**46**		
1,2-DICHLOROETHANE	0.5	J	
1,2-DICHLOROETHENE (TOTAL)	61		
BENZENE	0.2	J	
CARBON DISULFIDE	0.5	J	
CHLOROETHANE	4.9	J	
CHLOROMETHANE	0.3	J	
TRICHLOROETHENE	1.1	J	
VINYL CHLORIDE	**40**		

HP-SGI-47			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	1.8		18'-20'
METHYL TERT-BUTYL ETHER	0.8	J	
TOLUENE	0.06	J	

MW-SGI-08			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	9		14.1'-29.1'
1,2-DICHLOROETHENE (TOTAL)	10		
1,2-DICHLOROPROPANE	0.09	J	
BENZENE	0.1	J	
TRICHLOROETHENE	0.3	J	
VINYL CHLORIDE	**23**		

HP-SGI-46			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.2	J	17.5'-19'
ACETONE	10	J	

HP-SGI-45			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.4	J	18'-20'
1,2-DICHLOROETHANE	0.2	J	
1,2-DICHLOROETHENE (TOTAL)	2.5		
ACETONE	6	J	
TRICHLOROETHENE	0.2	J	

HP-SGI-44			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.2	J	16'-18'
1,2-DICHLOROETHENE (TOTAL)	19		
ACETONE	29	J	
BENZENE	0.2	J	
TRICHLOROETHENE	5.4		

HP-SGI-42			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	0.4	J	13'-15'
CARBON DISULFIDE	0.3	J	
TOLUENE	0.08	J	

HP-9-30			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	9	J	12.0'-15.0'
TRICHLOROETHENE	3	J	
VINYL CHLORIDE	**2**	J	
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			34.0'-37.0'

HP-SGI-48			
ANALYTE	CONC.	Q	DEPTH
1,2,3-TRICHLOROPROPANE	**0.8**		18'-20'
1,2-DICHLOROETHENE (TOTAL)	2.7		
TRICHLOROETHENE	0.2	J	

HP-SGI-72			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	0.4	J	9.5'-12'
1,4-DICHLOROBENZENE	0.05	J	
BENZENE	0.4	J	
CARBON DISULFIDE	0.3	J	
CHLOROETHANE	0.2	J	
ETHYLBENZENE	0.06	J	

HP-SGI-25			
ANALYTE	CONC.	Q	DEPTH
1,1,1-TRICHLOROETHANE	0.1	J	12'-15'
1,1-DICHLOROETHANE	0.3	J	
1,2-DICHLOROETHENE (TOTAL)	2.3		
BENZENE	0.1	J	
CARBON DISULFIDE	0.2	J	
CHLOROFORM	0.06	J	
TETRACHLOROETHENE	0.3	J	
TRICHLOROETHENE	11		
TRICHLOROFLUOROMETHANE	0.1	J	

HP-SGI-73			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	0.4	J	9.5'-12'
BENZENE	0.3	J	
CARBON DISULFIDE	0.4	J	
CHLOROMETHANE	0.1	J	

HP-SGI-40			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.2	J	10'-13'
1,2-DICHLOROETHENE (TOTAL)	1.5		
METHYL TERT-BUTYL ETHER	0.6	J	
VINYL CHLORIDE	**2.1**		

HP-SGI-35			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	5.8	J	10'-13'
1,2-DICHLOROETHENE (TOTAL)	**1200**		
BENZENE	0.4	J	
DICHLORODIFLUOROMETHANE	0.2	J	
TRICHLOROETHENE	8.6	J	
VINYL CHLORIDE	**400**		

HP-SGI-49			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.1	J	13'-15'
1,2-DICHLOROETHENE (TOTAL)	0.7		
CARBON DISULFIDE	0.2	J	
CHLOROMETHANE	0.09	J	
TOLUENE	0.06	J	
VINYL CHLORIDE	**14**		

MW-SGI-17			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	0.2	J	5.0'-20.0'
1,2-DICHLOROETHENE (TOTAL)	4.7		
1,2-DICHLOROPROPANE	0.1	J	
1,3-DICHLOROPROPANE	0.08	J	
CHLOROMETHANE	0.3	J	
TRICHLOROETHENE	0.07	J	
VINYL CHLORIDE	**1.3**		

HP-9-31			
ANALYTE	CONC.	Q	DEPTH
1,1-DICHLOROETHANE	2	J	9.0'-12.0'
TRICHLOROETHENE	1	J	
ALL OTHER COMPOUNDS NON-DETECT			
ALL COMPOUNDS NON-DETECT			37.0'-40.0'

HP-9-19			
ANALYTE	CONC.	Q	DEPTH
1,1,1-TRICHLOROETHANE	11	J	9.0'-12.0'
1,2-DICHLOROETHENE (TOTAL)	570		
TRICHLOROETHENE	10	J	
VINYL CHLORIDE	**21**	J	
ALL OTHER COMPOUNDS NON-DETECT			

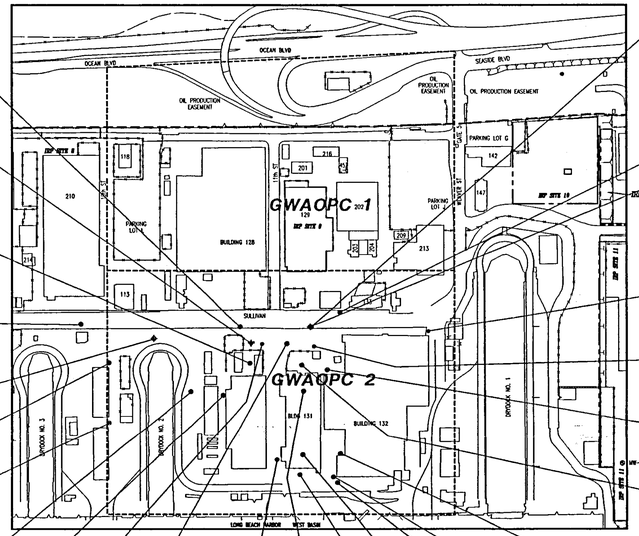
HP-SGI-26			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	0.3	J	11'-13'

HP-SGI-27			
ANALYTE	CONC.	Q	DEPTH
CARBON DISULFIDE	0.5		10.0'-13.0'
1,2-DICHLOROETHENE (TOTAL)	0.5		
CHLOROFORM	0.07	J	
TRICHLOROETHENE	3.2		
CARBON DISULFIDE	0.3	J	37.5'-40'
CHLOROMETHANE	0.08	J	
ETHYLBENZENE	0.07	J	

HP-SGI-24			
ANALYTE	CONC.	Q	DEPTH
1,2-DICHLOROETHENE (TOTAL)	0.8		7'-9'
TETRACHLOROETHENE	0.6		
TRICHLOROETHENE	0.1	J	
VINYL CHLORIDE	0.09	J	

HP-SGI-23			
ANALYTE	CONC.	Q	DEPTH
ALL COMPOUNDS NON-DETECT			7'-9'

HP-SGI-22			
ANALYTE	CONC.	Q	DEPTH
1,2,3-TRICHLOROBENZENE	0.4	J	7'-9'
2-BUTANONE (MEK)	7	J	
HEXACHLOROBUTADIENE	0.4	J	
TOLUENE	0.1	J	



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EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996)
- SITE INSPECTION (JEG 1992)

HYDROPUNCH (HP)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

CONE PENETROMETER TEST SOUNDING (CPT)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

PIEZOMETER (HP) OR TEMPORARY DEEP WELL POINT (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997)

(ug/L) CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

GWAOPC 2 — APPROXIMATE LIMITS OF GWAOPC

GROUNDWATER SAMPLE LOCATION (E.G. HYDROPUNCH LOCATION) WITH ANALYTES DETECTED, ANALYTE CONCENTRATION, QUALIFIERS AND SAMPLE/SCREEN INTERVAL. **BOLD** TEXT INDICATES THE CHEMICAL EXCEEDS THE SCREENING CRITERIA LISTED ON TABLE 4-1.

SAMPLE DESIGNATION

HP-SGI-08			
ANALYTE	CONC.	Q	DEPTH
		X	

SAMPLE/SCREEN INTERVAL
RESULTS (ug/L) (UNLESS NOTED)
QUALIFIER

- SGI WORK PLAN STUDY BOUNDARY
- IRP SITE BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE *(LBNSY BUILDING DESIGNATION)*

NOTES:
1. SITE MAP ORIGINATED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV. 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE SHOWN IN REFERENCE TO THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" (NAVFAC DWG NO. 6117951).
3. SOURCE OF EXISTING EXPLORATION POINTS: DRAFT RI REPORT (BNI 1996b).

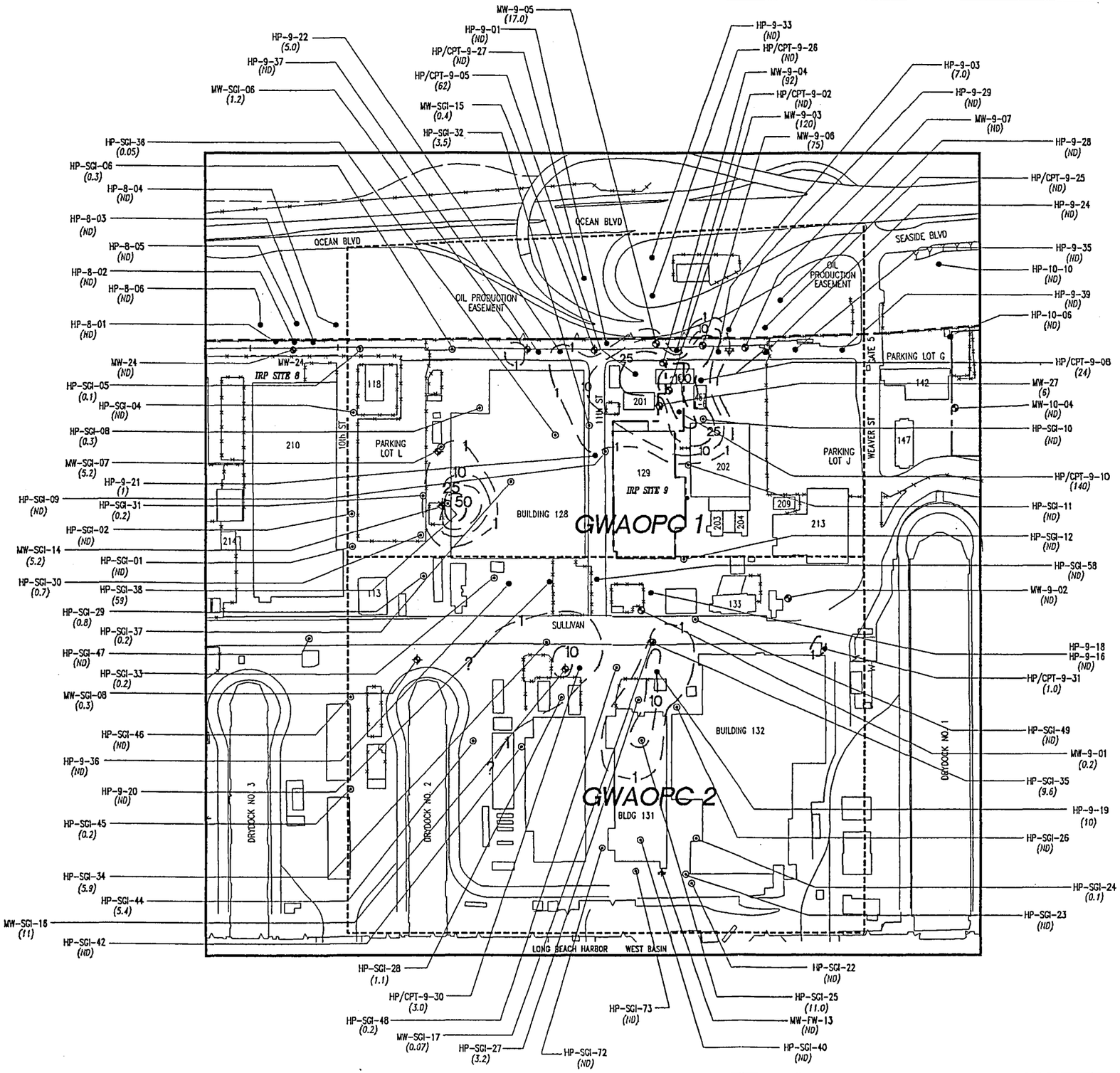
0 300 600
APPROXIMATE SCALE IN FEET

SGI REPORT
FIGURE 5-5
VOCs DETECTED IN THE GROUNDWATER OF THE UPPER INTERVAL (0-40 FEET BGS) IN THE VICINITY OF IRP SITE 9 (SULLIVAN AVENUE AND SOUTH)

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 8/13/98
FILE NO.: 123-154.DWG
JOB NO.: 22214-123



EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996a)
- SITE INSPECTION (JEG 1992b)

HYDROPUNCH (HP)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

PIEZOMETER (HP) OR TEMPORARY DEEP WELL POINT (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

GWAOPC 2 — APPROXIMATE LIMITS OF GWAOPC

CHEMICAL DATA SYMBOLS:

25 — TCE ISOCONCENTRATION CONTOUR IN MICROGRAMS PER LITER (ug/L); DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE LOCATION IS CONJECTURAL.

(100) — TCE CONCENTRATION IN (ug/L); ND – INDICATES COMPOUND WAS NOT DETECTED ABOVE THE LABORATORY DETECTION LIMIT

TOPOGRAPHIC SYMBOLS:
- IRP SITE BOUNDARY
- SGI WORK PLAN STUDY BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (*LBNSY BUILDING DESIGNATION*)

NOTES:

1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. BASED ON THE SGI WORK PLAN (BNI 1997b), SCREENING CRITERIA FOR TCE IN THE UPPER INTERVAL IS 27 ug/L.

0 300 600

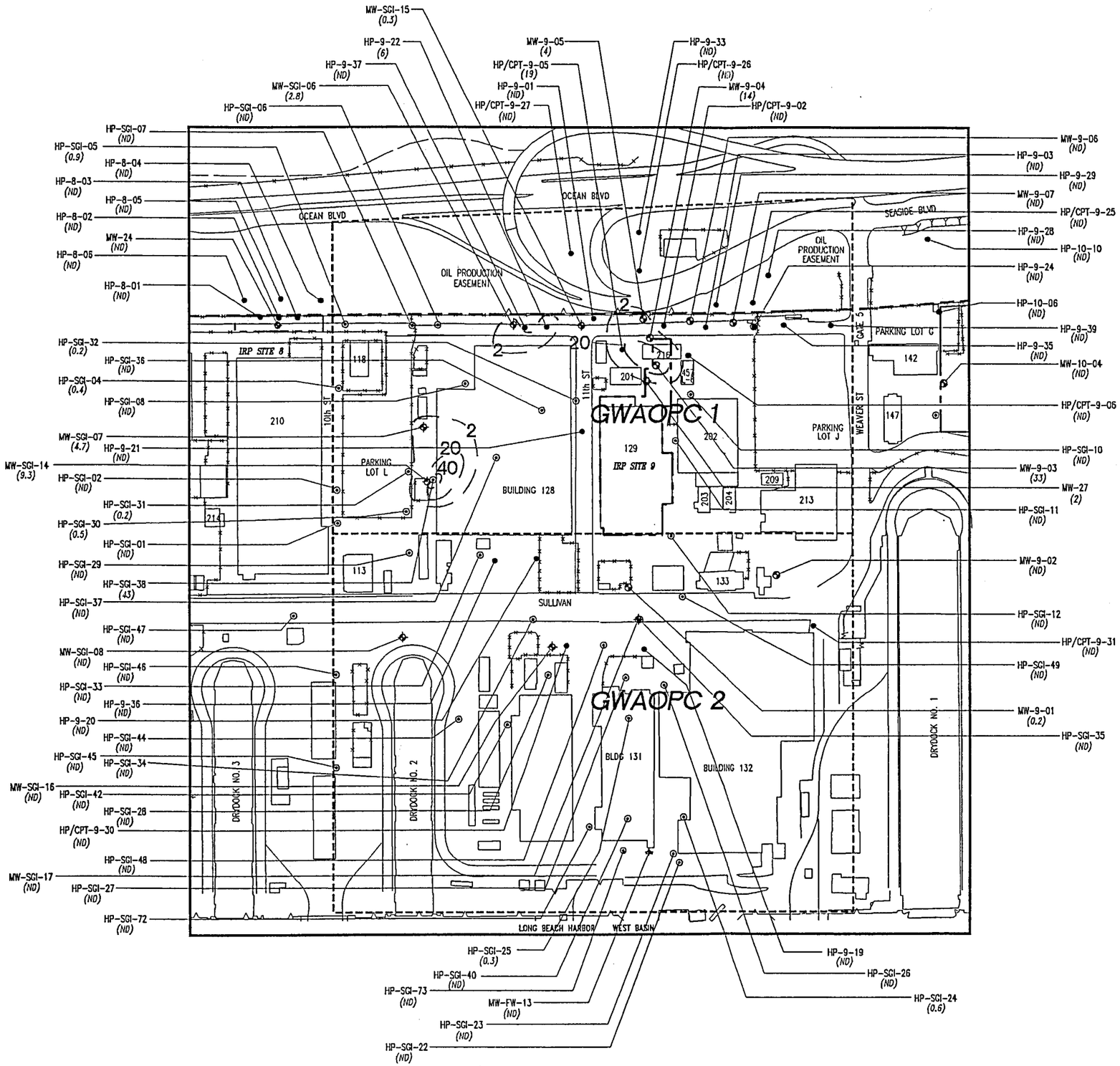
APPROXIMATE SCALE IN FEET

SGI REPORT
FIGURE 5-6
TCE CONCENTRATIONS IN THE GROUNDWATER OF THE UPPER INTERVAL (0-40 FEET BGS) IN THE VICINITY OF IRP SITE 9

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 01/19/99
FILE NO.: 123-101.DWG
JOB NO.: 22214-123



EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)

- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996a)
- SITE INSPECTION (JEG 1992b)

HYDROPUNCH (HP)

- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

PIEZOMETER (HP) OR TEMPORARY DEEP WELL POINT (MW)

- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

GWAOPC 2 — APPROXIMATE LIMITS OF GWAOPC

CHEMICAL DATA SYMBOLS

2 — PCE ISOCONCENTRATION CONTOUR IN MICROGRAMS PER LITER (ug/L); DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE LOCATION IS CONJECTURAL

(33) — PCE CONCENTRATION (IN ug/L); ND – INDICATES COMPOUND WAS NOT DETECTED ABOVE THE LABORATORY DETECTION LIMIT

TOPOGRAPHIC SYMBOLS:

- IRP SITE BOUNDARY
- SGI WORK PLAN STUDY BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (*LBNSY BUILDING DESIGNATION*)

NOTES:

1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. BASED ON THE SGI WORK PLAN (BNI 1997b), SCREENING CRITERIA FOR PCE IS 2 ug/L.

0 300 600

APPROXIMATE SCALE IN FEET

SGI REPORT

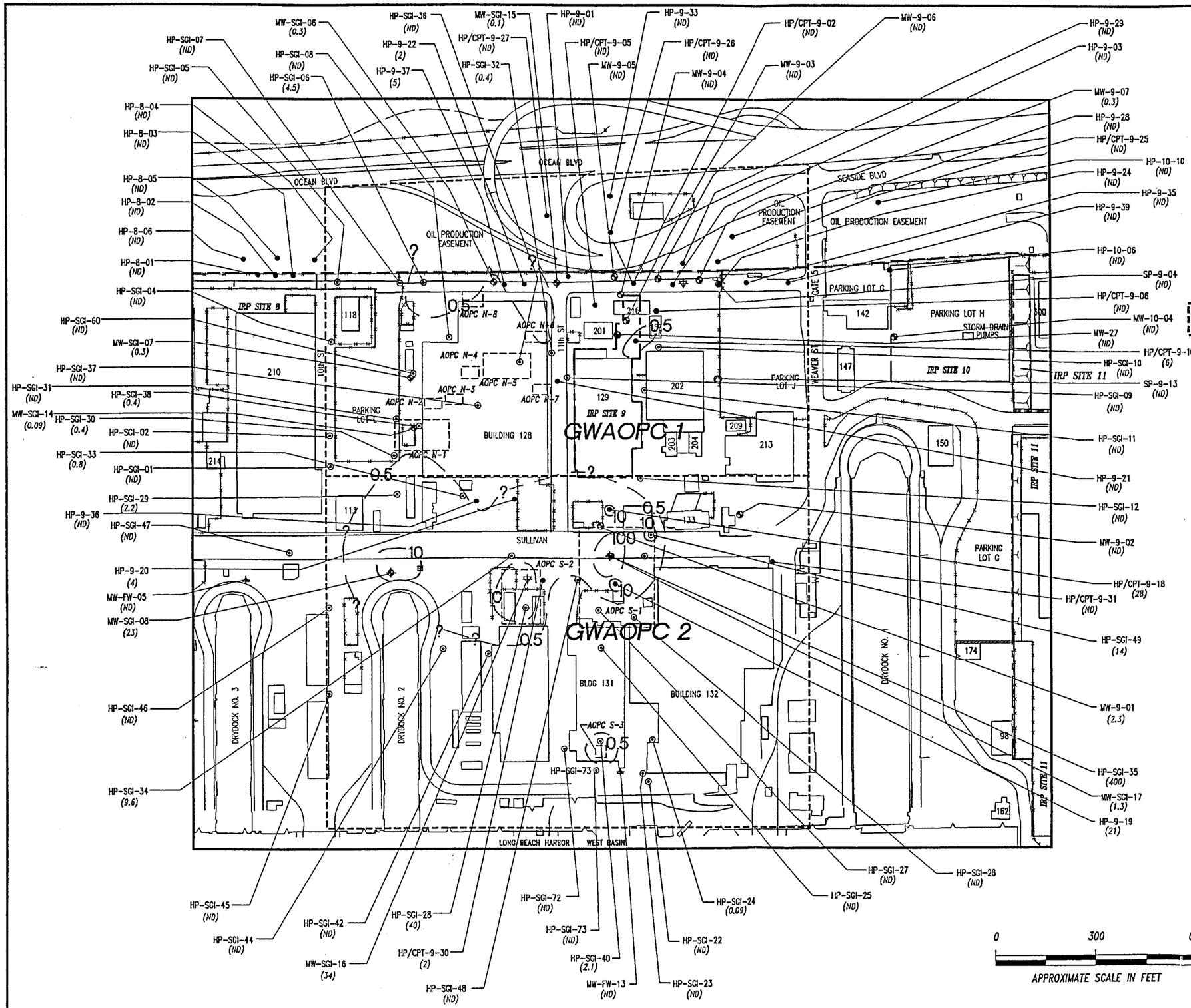
FIGURE 5-7

PCE IN THE GROUNDWATER OF
THE UPPER INTERVAL (0-40 FEET BGS)
IN THE VICINITY OF IRP SITE 9

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN I Program

DATE: 01/19/99
FILE NO.: 123-095.DWG
JOB NO.: 22214-123



EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996a)
- SITE INSPECTION (JEG 1992b)

HYDROPUNCH (HP)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

STRATAPROBE (SP)
- REMEDIAL INVESTIGATION (BNI 1997a)

GWAOPC 2 — APPROXIMATE LIMITS OF GWAOPC

CHEMICAL DATA SYMBOLS:

0.5 — VC ISOCONCENTRATION CONTOUR IN MICROGRAMS PER LITER (ug/L); DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE LOCATION IS CONJECTURAL.

(400) — VC CONCENTRATION (IN ug/L); ND – INDICATES COMPOUND WAS NOT DETECTED ABOVE THE LABORATORY DETECTION LIMIT.

TOPOGRAPHIC SYMBOLS:
- IRP SITE BOUNDARY
- SGI WORK PLAN STUDY BOUNDARY
- (2) LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (LBNSY BUILDING DESIGNATION)
- APPROXIMATE AOPC BOUNDARY

NOTES:

1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. BASED ON THE SGI WORK PLAN (BNI 1997b), SCREENING CRITERIA FOR VINYL CHLORIDE IS 0.58 ug/L

SGI REPORT

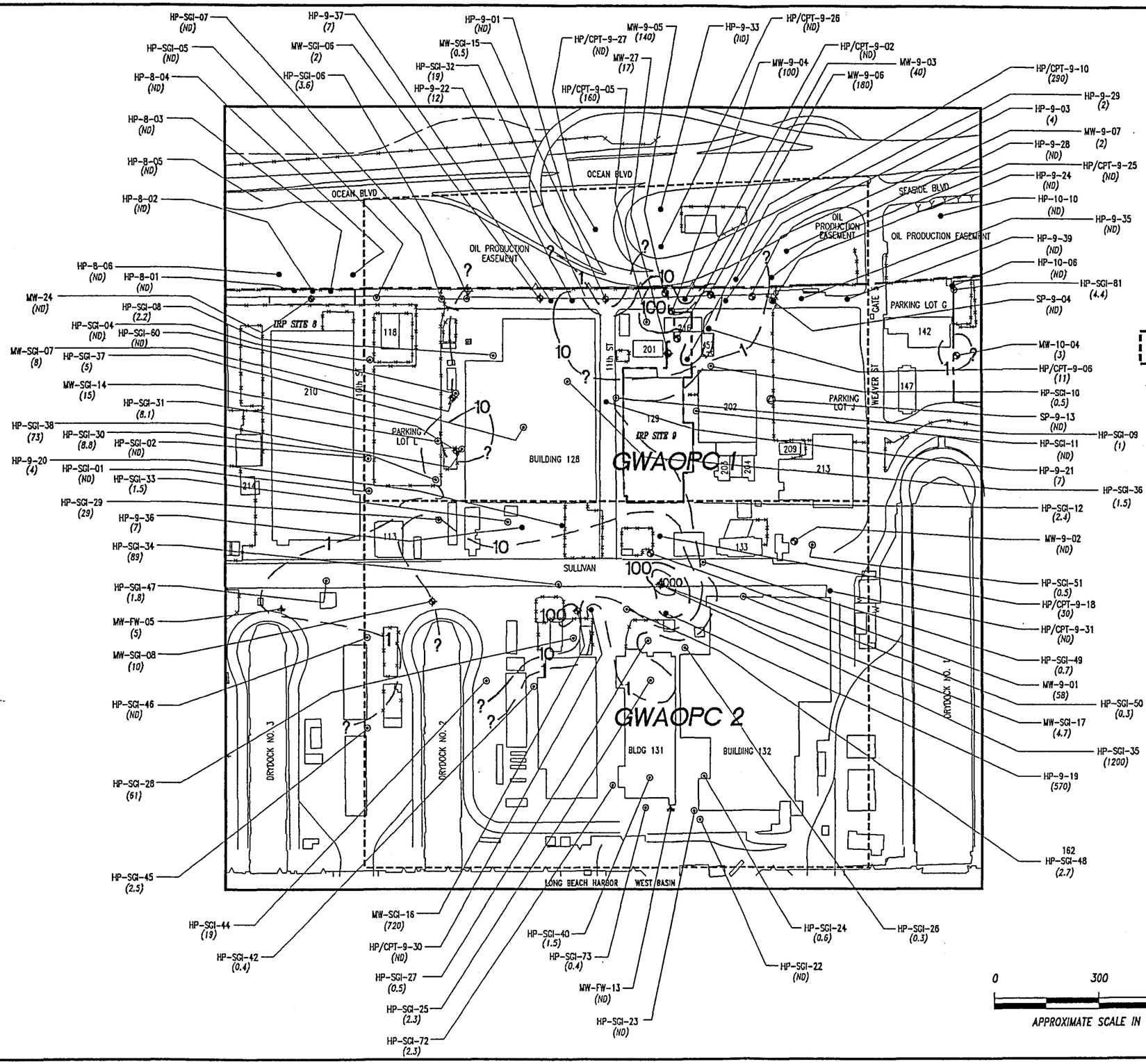
FIGURE 5-8

VINYL CHLORIDE (VC) CONCENTRATIONS IN THE GROUNDWATER OF THE UPPER INTERVAL (0-40 FEET BGS) IN THE VICINITY OF IRP SITE 9

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 01/19/99
FILE NO.: 123-092.DWG
JOB NO.: 22214-123



EXPLANATION

EXPLORATION SYMBOLS – APPROXIMATE LOCATION OF:

SHALLOW MONITORING WELL (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)
- FACILITYWIDE GROUNDWATER INVESTIGATION (BNI 1996a)
- SITE INSPECTION (JEG 1992b)

HYDROPUNCH (HP)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

PIEZOMETER (HP) OR TEMPORARY DEEP WELL POINT (MW)
- THIS INVESTIGATION
- REMEDIAL INVESTIGATION (BNI 1997a)

STRATAPROBE (SP)
- REMEDIAL INVESTIGATION (BNI 1997a)

GWAOPC 2 — APPROXIMATE LIMITS OF GWAOPC

CHEMICAL DATA SYMBOLS:

10 — 1,2-DCE ISOCONCENTRATION CONTOUR IN MICROGRAMS PER LITER (ug/L); DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE LOCATION IS CONJECTURAL

(570) — DCE CONCENTRATION (IN ug/L); ND – INDICATES COMPOUND WAS NOT DETECTED ABOVE THE LABORATORY DETECTION LIMIT

TOPOGRAPHIC SYMBOLS:
- IRP SITE BOUNDARY
- SGI WORK PLAN STUDY BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (LBNSY–BUILDING DESIGNATION)

NOTES:

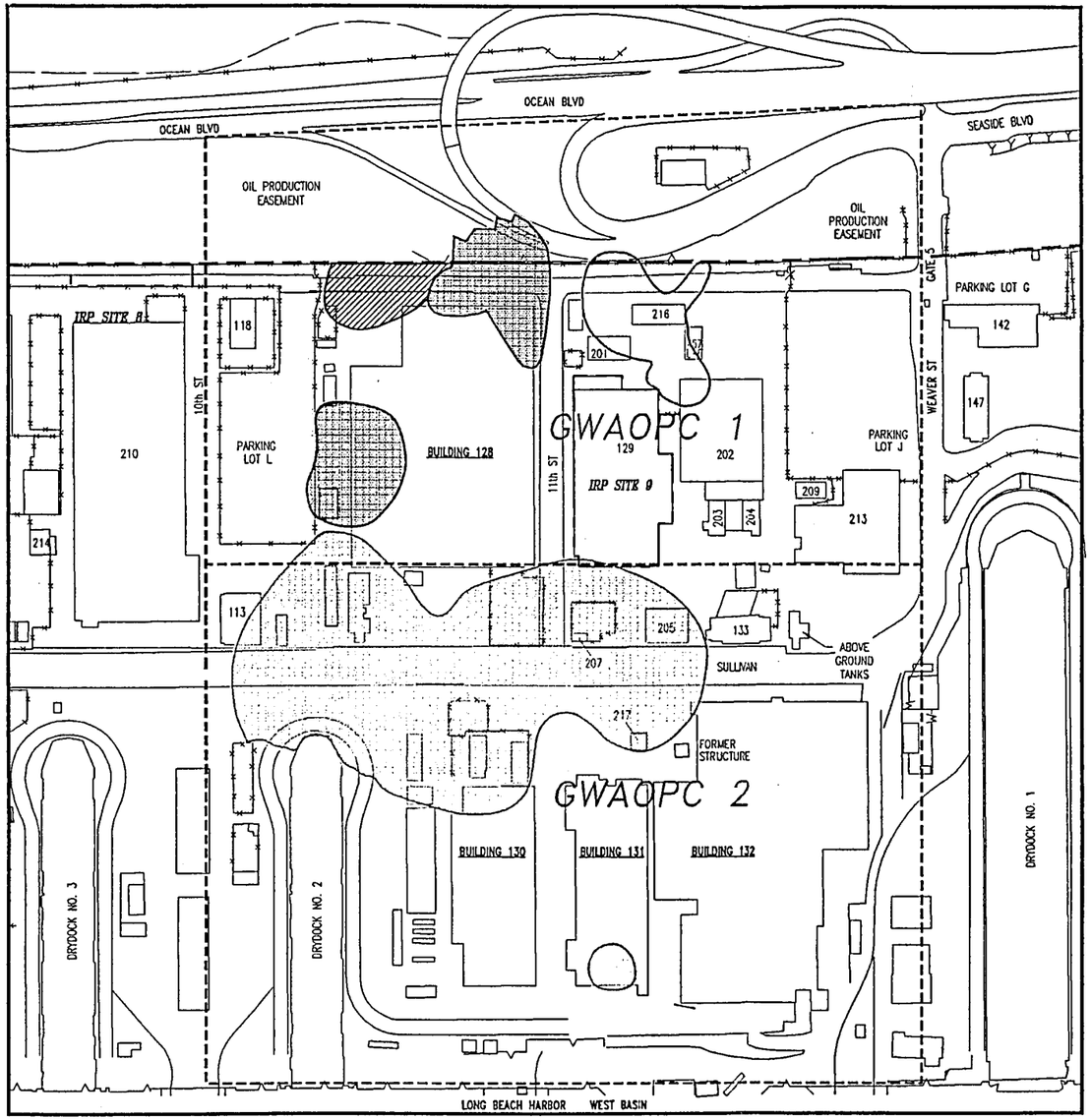
1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1–24–94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. BASED ON THE SGI WORK PLAN (BNI 1997b), SCREENING CRITERIA FOR 1,2–DCE (TOTAL) IN THE UPPER INTERVAL IS 714 ug/L.

SGI REPORT
FIGURE 5–10
1,2–DCE (TOTAL) IN THE GROUNDWATER OF THE UPPER INTERVAL (0–40 FEET BGS) IN THE VICINITY OF IRP SITE 9

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 01/21/99
FILE NO.: 123-098.DWG
JOB NO.: 22214-123



EXPLANATION

- IRP SITE BOUNDARY
- PROPOSED STUDY BOUNDARY
- 2 LBNSY PROPERTY BOUNDARY
- FENCE
- WALL
- TOP SLOPE
- 128 STRUCTURE (NAVAL SHIPYARD DESIGNATION)
- GWAOPC 2 APPROXIMATE LIMITS OF GWAOPC

GROUNDWATER PLUMES:

- APPROXIMATE LIMITS OF SOUTHERN PLUME AREA
- APPROXIMATE LIMITS OF NORTHERN PLUME AREA
- APPROXIMATE LIMITS OF CHLORINATED VOC GROUNDWATER PLUME DEFINED BY REMEDIAL INVESTIGATION (BNI 1997c)
- APPROXIMATE LIMITS OF CHLORINATED VOC GROUNDWATER PLUME TO BE INVESTIGATED AS PART OF ANOTHER INVESTIGATION

NOTES:

1. SITE MAP MODIFIED FROM "TERMINAL ISLAND U.S. NAVAL FACILITIES" (REV 1-24-94).
2. LBNSY PROPERTY BOUNDARIES ARE REPRODUCED FROM THOSE SHOWN ON "REAL ESTATE SUMMARY MAP" NAVFAC DWG NO. 6117951.
3. PLUME DEFINED BY COMPARISON TO SCREENING CRITERIA DEFINED IN WORK PLAN (BNI 1997b).

0 300 600

APPROXIMATE SCALE IN FEET

SGI REPORT

FIGURE 5-17

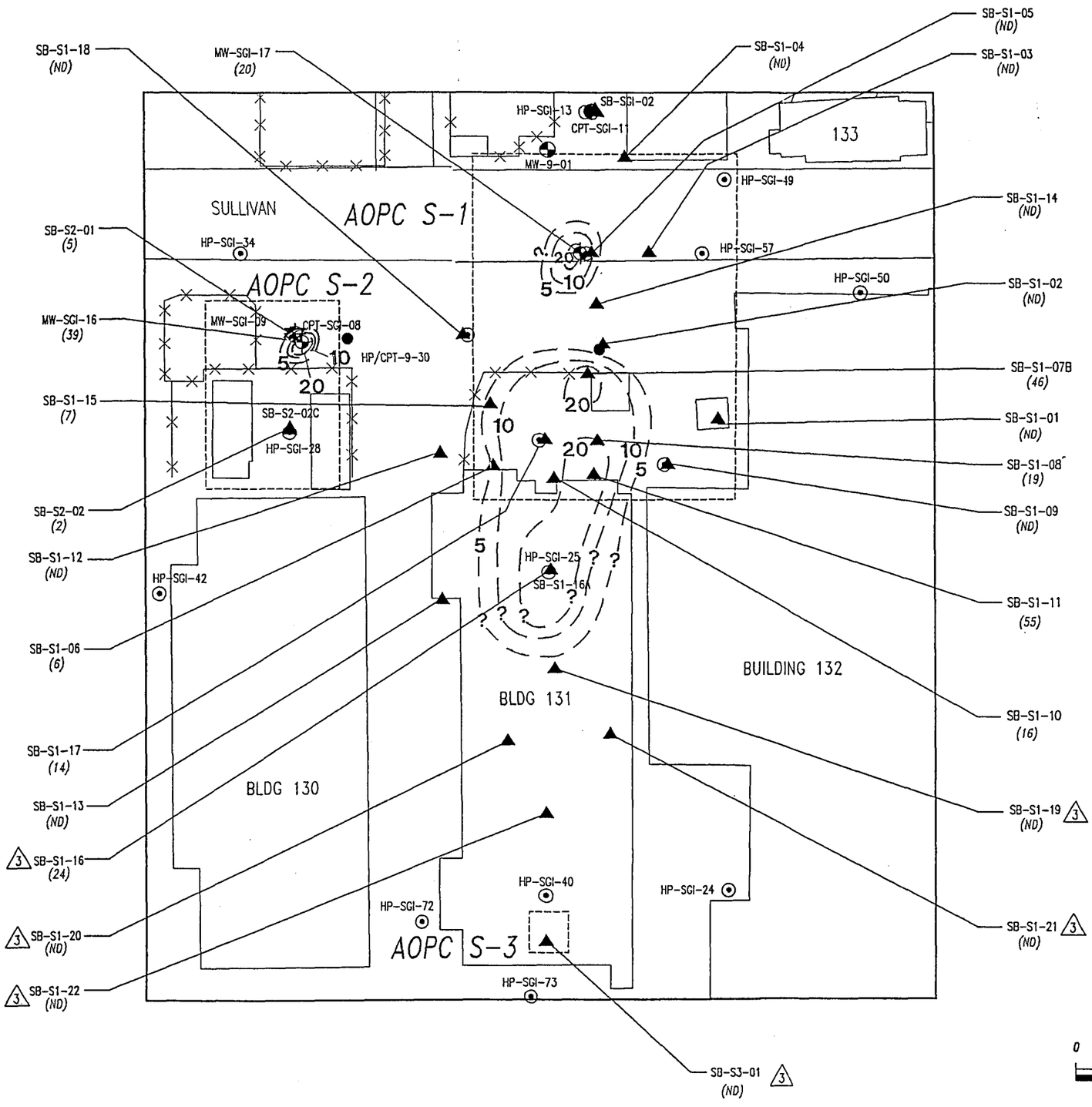
SITE MAP SHOWING GROUNDWATER PLUMES IN THE VICINITY OF IRP SITE 9

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc

CLEAN II Program

DATE: 8/13/98
FILE NO.: 123-155.DWG
JOB NO.: 22214-123



SGI REPORT

FIGURE 5-20
TCE CONCENTRATIONS IN THE SOIL (4 TO 7 FEET BGS) AT AOPCs S-1, S-2, & S-3

NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

Bechtel National, Inc
CLEAN II Program

DATE: 8/10/98
FILE NO.: 123-148.DWG
JOB NO.: 22214-123

APPENDIX F

TANK CLOSURE LETTERS

Table F-1
Tank Closure Letters

Letter Date	Regulatory Agency	UST(s)/FTU(s) Addressed	AOC Number	Summary
10 April 1997	RWQCB	UST 207.1	UST 10	RWQCB concurrence with Navy's recommendation for No Further Action
3 April 1998	Navy Request for Closure sent to DTSC	FTU 05	IWS 5	Navy requested closure of Tier Permitted equipment at LBNSY.
		FTU 06	IWS 3	
		FTU 07	MISC 8	
		FTU 08	IWS 7	
		FTUs 09 and 10	IWS 4	
		FTU 11	ADD 1	
22 May 1998	RWQCB	USTs 129.1, 129.2	UST 3	RWQCB concurrence that No Further Action is required.
29 May 1998	Joint Powers Agency Long Beach/Signal Hill Unified Program Agency	USTs 129.1, 129.2	UST 3	Concurrence of No Further Action
20 July 1998	RWQCB	UST 207.1	UST 10	RWQCB concurrence with Navy recommendation of No Further Action for soil and groundwater
		UST 301.1	UST 19	
		USTs 302.1, 302.2, 303.3	UST 7	
11 September 1998	Joint Powers Agency Long Beach/Signal Hill Unified Program Agency	USTs 129.3, 129.4, 129.6, 129.7	MISC 6	No Further Action required
		UST 207.1	UST 10	
		UST 301.1	UST 19	
		USTs 302.1, 302.2, 302.3	UST 7	
		Building 122 oil/water separator	MISC 8	
19 February 1999	RWQCB	USTs 128.1, 128.2, and Pump Vault 128.3	UST 1	RWQCB concurrence that No Further Action is required.
7 October 1999	RWQCB	USTs 129.8 and 129.9	MISC 6	No Further Action required

Notes:
DTSC = Department of Toxic Substances Control
EPA = Environmental Protection Agency
LBNSY = Long Beach Naval Shipyard
MISC = Miscellaneous
RWQCB = California Regional Water Quality Control Board, Los Angeles Region
UST = Underground Storage Tank

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
'S ANGELES REGION
CENTRE PLAZA DRIVE
...ONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

April 10, 1997

Mr. Gary Simon
Southwest Division
Naval Facilities Engineering Command
Code 1832.SR
1220 Pacific Highway
San Diego, CA 92132-5183

SCAPS ADDENDUM SITE ASSESSMENT REPORT - LONG BEACH NAVAL COMPLEX, LONG BEACH, CALIFORNIA (File No. 90-76)

We have received and reviewed the Site Characterization and Analysis Penetrometer System (SCAPS) Addendum Site Assessment Report for the Long Beach Naval Complex, dated March 25, 1997. Board staff also met with and discussed the report findings with the Navy on February 27, 1997. Based on the above, we have the following comments:

- The sites referenced in Figure 1 do not appear to match the sites discussed in the text. Please clarify.

- The recommendations for Site 5 East, in Section 2.2.6, should include delineation of the groundwater contamination present at the site. Also, include organic lead in any future analyses for this site.

- The significant levels of gasoline, diesel, and MTBE detected in the soil at Site 101 indicate that groundwater impact at this site is likely. Therefore, the recommendations in Section 2.3.6 should include a proposal to delineate the groundwater contamination at this site.

- The soil sample closest to Site 122 was about 20 feet away from the oil/water separator, and had a petroleum odor to it. Based on the distance of the soil sample from the potential source, and the physical indication of contamination, we cannot agree that this site is un-impacted. Please provide a minimum of 48 hours notice prior to the scheduled removal of the oil/water separator, so staff can be on site to split samples with the Navy.

We concur with the Navy's recommendation for no further action at Sites 150, 91, 207, 220, 5 West, and 5 South. Also, we agree with the Navy's findings that further characterization is required at Sites 215, 5 East, and 101. If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.

Sites 215, 5 East, and 101. If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitterez, Department of Toxic Substances Control
CDR Anthony Didomenico, Naval Shipyard Long Beach
Faiq Aljabi, Navy Southwest Division, San Diego
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Naval Shipyard long Beach

Bldg. 150-

Four USTs at this building but this letter only covers UST # 150.1 (abandonded in place without City of Long Beach Closure) and UST # 365 (no City of Long Beach Closure). There are still two additional USTs to be removed this calendar year (UST #s 363 and 364).

Bldg. 91-

Only one UST at this location, UST # 328. We are waiting for the UST removal report for additional closure from the City of Long Beach.

Building 207-

Only one UST at this location, UST # 207.1 We are waiting for the UST removal report for additional closure from the City of Long Beach. ←

Bldg. 220-

This is a NAVSTA tank (# 220.1) and not within your AOC investigation(?). We are waiting for the UST removal report for additional closure from the City of Long Beach.

Bldg. 5 West, and 5 South-

This description is actually for USTs at building 7 west and south (UST #s 301, 332, & 333). We are waiting for the UST removal report for additional closure from the City of Long Beach on UST 301, 332, and 333.

Bldg. 215-

This is one UST # P-41.1 waiting for UST removal report but per the letter needs additional work. Contaminated soil has been treated so we are expecting closure for soil with follow-up with one year of GW monitoring.

Bldg. 5 East-

This description is actually for USTs at building 7 east (UST #s 302, & 303 & also UST # 304 inside building 7). We are waiting for UST removal report but per the letter needs additional work. We expect closure for soil but follow-up with one year of GW monitoring.

Bldg. 101-

There were up to 20 USTs at this site. All have been removed and 2,500 CY soil has been treated. Per the letter, additional characterization is required to delineate soil contamination to north and northeast/northwest ends of the site. In addition, GW is impacted at this site so additional work is required for GW. If you need the UST #s, see LBNSY BCP.

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
OFFICER IN CHARGE, CARETAKER SITE OFFICE
LONG BEACH NAVAL COMPLEX
821 REEVES AVENUE
TERMINAL ISLAND, CA 90731

5090
Ser CSO LB/0010
03 April 1998

California Environmental Protection Agency
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

The purpose of this letter is to request that the following Tier Permitted equipment located at the former Long Beach Naval Shipyard, EPA ID #CA6170023109, be withdrawn from your database.

Long Beach Naval Shipyard closed on 30 September 1997. All industrial operations have ceased, all buildings and facilities are locked and have been placed in a caretaker status until they are leased or conveyed to the City of Long Beach.

Unit ID	Unit Type	Location	Name - Description
FTU 05	Tier IV Conditionally Authorized	Building 132 (east side)	**Industrial Wastewater Clarifier:** Oil / water separator and clarifier unit for pipefitting and machine shops.
FTU 06	Tier IV Conditionally Authorized	Structure 891 (between piers 1 & 2)	**BOWTS:** Bilge and oily wastewater treatment system.
FTU 07	Tier IV Conditionally Authorized	Building 54 (west side)	**Oil / Water Separator:** Treatment for oily wastewater from the truck washing operations.
FTU 08	Tier IV Conditionally Authorized	Building 210 (east side)	**Oil / Water Separator:** Treatment for oily wastewater from steam cleaning operations.
FTU 09	Tier IV Conditionally Authorized	Drydock 1 (west side)	**DRYDKS 1/LIQ IND Waste Process Tanks:** Treatment for washdown from drydock floors and walls.
FTU 10	Tier IV Conditionally Authorized	Drydocks 2 & 3 (west side)	**DRYDKS 2 & 3/LIQ IND Waste Process Tanks:** Treatment for washdown from drydock floors and walls.
FTU 11	Tier V Conditionally Exempt	Building 102 (east side)	**Empty Can Crusher:** Crushing rinsed (less than 55 gallon) empty metal containers.

The Tier Permitted equipment listed above has not been physically removed but closure has been completed in accordance with State of California Health and Safety Code HSC 25200.3(g)(1)(A)(B). This action has minimized the need for further maintenance and eliminated the escape of hazardous waste, hazardous constituents, leachate, contaminated runoff or waste decomposition products to the environment.

If you have any questions please do not hesitate to contact me at (310) 732-6184 or the Long Beach BRAC Environmental Coordinator, Alan Lee at (619) 532-4748.

Sincerely,

A. DiDomenico

A. DiDomenico
LCDR, CEC, USN

5090
Ser CSO LB/0010
03 April 1998

Copy to:

Mr. Hugh Marley
California Environmental Protection Agency
Regional Water Quality Control Board - Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Mr. Martin Hausladen
United States Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Mr. Alan Lee
Long Beach BRAC Environmental Coordinator
BRAC Operations Office
1220 Pacific Highway
San Diego, CA 92132-5190

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
OS ANGELES REGION
CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

May 22, 1998

Commander
Southwest Division, Naval Facilities Engineering Command
Code 56LB.DR (Duane Rollefson)
1220 Pacific Highway
San Diego, CA 92132-5180

FINAL UNDERGROUND STORAGE TANK REMOVAL REPORT FOR TANK NUMBERS 129-1 AND 129-2, BUILDING 129, LONG BEACH NAVAL COMPLEX, LONG BEACH CALIFORNIA (FILE No. 90-75)

We have received and reviewed the *Final Underground Storage Tank (UST) Removal Report for Tank Numbers 129-1 and 129-2, Building 129, Long Beach Naval Complex, Long Beach California*, dated May 14, 1998. The report indicates that UST Nos. 129-1 and 129-2 were removed, and all TPH diesel contaminated soil exceeding the screening criteria for this site was excavated and appropriately remediated off-site. We concur, based on the data presented, that soil and groundwater remaining at this site does not exceed the screening criteria for this site. We require no further action for soil and groundwater at Tank Numbers 129-1 and 129-2, Building 129, Long Beach Naval Complex.

If you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitterez, Department of Toxic Substances Control
Martin Hausladen, Environmental Protection Agency
Alan Lee, Southwest Division

JOINT POWERS AGENCY
LONG BEACH/SIGNAL HILL
Unified Program Agency
2525 Grand Avenue • Long Beach, California 90815 • (562) 570-4131

May 29, 1998

Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway Code N 56LB-DR
San Diego, California 92132

Attention: Duane Rollefson

Re: UST Removal Building 129 (Tank 129-1 & 129-2)
Long Beach Naval Complex

Dear Mr. Rollefson:

This letter confirms the completion of the removal of (2) two 2,300 gallon underground storage tank(s) formerly located at the above described location.

Based on the information in the above-reference file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank removal is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

Please contact me at (562) 570-4128 if you have any questions regarding this matter.

Sincerely,

Jeff Benedict, R.E.H.S., M.P.A.
Hazardous Waste Operations Officer

cc: Long Beach Fire Prevention Bureau

satlet

California Regional Water Quality Control Board
Los Angeles Region

Peter M. Rooney
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/~rwqcb4
101 Centre Plaza Drive, Monterey Park, California 91754-2156
Phone (323) 266-7500 FAX (323) 266-7600

Pete Wilson
Governor

July 20, 1998

Commander
Southwest Division, Naval Facilities Engineering Command
Code 56LB.DR (Duane Rollefson)
1220 Pacific Highway
San Diego, CA 92132-5180

UNDERGROUND STORAGE TANK AND OIL WATER SEPARATOR REMOVAL REPORT - LONG BEACH NAVAL COMPLEX, LONG BEACH CALIFORNIA (FILE No. 90-75)

We have received and reviewed your the *Underground Storage Tank And Oil Water Separator Removal Report - Long Beach Naval Complex, Long Beach California,* dated June 23, 1998. The report documents the petroleum hydrocarbon tank removal, soil over-excavation, and confirmation sampling activities performed at Sites 5, 91, 122, 207, 220, 301, 302, and 215. The confirmation sampling data indicates that remaining concentrations of petroleum hydrocarbon do not exceed the screening criteria established for the sites. Also, groundwater monitoring has been implemented at Site 5 and site 215. Based on the above, we concur with the Navy's request for no further action for soil at Sites 5 and 215, and no further action for soil and groundwater at Sites 91, 122, 207, 220, 301, 302, and 215.

If you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitterez, Department of Toxic Substances Control
Martin Hausladen, Environmental Protection Agency
Alan Lee, Southwest Division

JOINT POWERS AGENCY
LONG BEACH/SIGNAL HILL
Unified Program Agency
2525 Grand Avenue • Long Beach, California 90815 • (562) 570-4131

September 11, 1998

Commander
Southwest Division, Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

Attention: Mr. Duane Rollefson (Code 56LB.DR)

Regarding: Removal of certain Underground Storage Tanks (UST) and Oil Water Separator (OWS) at the Long Beach Naval Shipyard, Long Beach, California

Dear Commander:

The Long Beach Department of Health and Human Services has received the soil analyses and closure reports for the following UST and OWS.

Building #	Tank #
7	301, 332, 333 (these tanks were formerly associated with Bldg. 5 West and 5 South)
7	302, 303, 304 (these tanks were formerly associated with Bldg. 5 East)
53	53.1
91	328
104A	377 (Saltwater Pump Pit #1)
109	109.1 (also previously designated as #378)
122	122 (OWS)
129	129.3, 129.4, 129.6, 129.7

Building #	Tank #
151 (Substation #2)	367, 368
196	196.1
207	207.1
213	353
215	41.1
220	220.1
301	301.1
302	302.1, 302.2, 302.3

Based on the results of the samples and closure reports, no further action will be required by this Department.

If any further information is required, please contact Cheryl Sandel at (562) 570-4127.

Sincerely,

Jeff Benedict

Jeff Benedict, R.E.H.S., M.P.H.
Hazardous Waste Operations Officer

cc: Long Beach Fire Prevention Bureau

California Regional Water Quality Control Board

Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

101 Centre Plaza Drive, Monterey Park, California 91754-2156
Phone (323) 266-7500 · FAX (323) 266-7600
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

February 19, 1999

Commander
Southwest Division, Naval Facilities Engineering Command
Code 56LB.DR (Duane Rollefson)
1220 Pacific Highway
San Diego, CA 92132-5180

DRAFT CLOSURE REPORT FOR BUILDING 128 GROUNDWATER INVESTIGATION AT THE FORMER LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE NO. 90-75)

Dear Mr. Rollefson:

We have received and reviewed the *Draft Closure Report For Building 128 Groundwater Investigation At The Former Long Beach Naval Shipyard, Long Beach, California,* dated November 12, 1998. The U.S. Navy requests no further action for the Building 128 UST site, located entirely within the boundaries of the former Long Beach Naval Shipyard. The former Naval Shipyard is currently owned by the U.S. Navy.

Two Underground Storage Tanks (USTs) at the site were used to store solvents and industrial wastes. The two USTs, their associated pipelines, and 325 cubic yards of surrounding soil were excavated and properly disposed of off-site. Groundwater was encountered at 12.5 feet below ground surface (bgs).

Analytical data included in the report indicates that all Chemicals of Potential Concern (COPCs), in soil, identified at concentrations exceeding the screening criteria for this site, have been excavated and appropriately disposed of. Groundwater was sampled to a depth of 42 feet bgs. Board staff observed the excavation and split samples with the Navy. Concentrations of COPCs remaining in soil and detected in groundwater do not exceed both this Regional Board's Interim Site Assessment and Cleanup Guidebook criteria for soil and the 1997 State Water Resources Control Board California Ocean Plan Water Quality Objectives.

Based upon the information submitted, we have determined that the subject site can be closed as a "Low Risk" case. Therefore, we concur with your request for no further action. If you have any questions, please contact Ms. Anita Jain at (323) 266-7579, or Hugh Marley at (323) 266-7669.

Sincerely,

Hugh Marley for

REBECCA CHOU, Ph.D., P.E.
Unit Chief, Site Cleanup Unit

cc: Alvaro Gutierrez, Department of Toxic Substances Control
Martin Hausladen, Environmental Protection Agency
Alan Lee, Southwest Division
Bob Kanter, Port of Long Beach

California Regional Water Quality Control Board
Los Angeles Region

Winston H. Hickox
Secretary for
Environmental
Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

October 7, 1999

Commander
Attn: Mr. Duane Rollefson (Code 05BN.DR)
Southwest Division, Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

UNDERGROUND STORAGE TANK CLOSURE
UNDERGROUND STORAGE TANKS SITES 129.8 AND 129.9
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE No. 90-75)

Dear Mr. Rollefson:

This letter confirms the completion of the site investigation activities for underground storage tanks 129.8 and 129.9 formerly located inside the northeast corner of Building 129 at the Long Beach Naval Shipyard. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks is greatly appreciated.

Based on the available information and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to these two underground storage tank releases is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

If you have any questions regarding this matter, please contact Ana Townsend at (213) 576-6738.

Sincerely,

DENNIS A. DICKERSON
Executive Officer

JAMES D. KUYKENDALL
Assistant Executive Officer

cc: Martin Hausladen, U.S. Environmental Protection Agency, Region IX
Aaron Yue, Department of Toxic Substances Control
Alan Lee, Southwest Division, Naval Facilities Engineering Command

APPENDIX G
LITHOLOGIC LOGS

Table G-1 Soil Type Descriptions for Samples Collected for Group B AOCs
Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No	Date Collected	Depth (feet bgs)	Description
HIST 1	HI1a	3/3/99	6	Silty sand (SM), 10% silt, fine to very fine, well sorted, dry, medium grey, shell fragments.
HIST 1	HI1b	3/3/99	5	Sand (SP), fine to very fine, moderately well sorted, dry, medium tan, 5% pebbles to 2mm.
HIST 1	HI1c	3/3/99	4	Sand (SP), very fine, well sorted, dry, light tan, shell fragments.
HIST 1	HI1d	3/3/99	5	Sand (SP), very fine, well sorted, damp, light tan.
HIST 1	HI1e	3/3/99	5	Silt (ML), poor cohesion, dark grayish, brown, damp.
HIST 1	HI1g	3/3/99	5	Sand (SP), fine to medium, moderately well sorted, damp, dark yellowish brown, 15% white cement fragments 0.5-5 mm.
HIST 1	HI1h	3/3/99	5	Silty sand (SM), fine, 20% silt, moist medium yellowish tan.
HIST 1	HI1i	3/4/99	5	Sand (SP), very fine, well sorted, damp, medium grayish tan.
HIST 1	HI1j	3/4/99	5	Sand (SW), fine to coarse, poorly sorted, moist, orangish brown, shell fragments.
HIST 2	HI2a	2/24/99	7	Silty sand (SM), 15% silt, fine well sorted, damp medium orangish brown, shell fragments.
HIST 8	HI8a	2/25/99	1	Sand (SP), fine to very fine, light grayish tan, damp, well sorted.
HIST 8	HI8b	2/25/99	1	Sand (SW), very fine to very coarse, very poorly sorted, damp, medium brown.
HIST 8	HI8c	2/25/99	1	Silty sand (SM), 10% silt, fine to very fine, well sorted, 5% 2-3 mm pebbles, moist.
HIST 9	HI9a	3/5/99	1	Sand (SW), fine to very coarse, poorly sorted dry 10% to 2 cm, medium orangish brown.
HIST 9	HI9b	3/5/99	1	Sand (SW), fine to coarse, poorly sorted, 5% gravel to 1 cm, medium brown, dry
MISC 1	M1Pa	6/17/98	0	Wet looking soil
MISC 1	M1Dc	3/5/99	2	Sand (SP), fine to medium, moderately well sorted, damp, medium grey, micaceous.
MISC 1	MIDb	3/8/99	2	Sand (SP), fine, well sorted, dry, tan
MISC 5	M5Fa	6/17/98	0	Sandy silt, 20% very fine sand, medium brown, dry, 10% 1/8" pebbles
MISC 5	M5Fb	6/17/98	0	Sandy silt, 20% very fine sand, medium brown, dry, 10% 1/8" pebbles
MISC 5	M5Fc	6/17/98	0	Sandy silt, 20% very fine sand, medium brown, dry, 10% 1/8" pebbles
MISC 5	M5Fd	6/17/98	0	Sandy silt, 20% very fine sand, medium brown, dry, 10% 1/8" pebbles

Table G-1 Soil Type Descriptions for Samples Collected for Group B AOCs (Continued)
Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No	Date Collected	Depth (feet bgs)	Description
MISC 5	M5Fe	6/17/98	0	Sandy silt, 20% very fine sand, medium brown, dry, 10% 1/8" pebbles
MISC 6	MI6c	3/8/99	5	Sand (SP), fine, well sorted, damp, greyishtan
MISC 6	MI6d	3/9/99	5	Sand (SP), fine, well sorted, damp, greyishtan
MISC 6	MI6a	3/1/99	5	Sand (SP), very fine, well sorted, 5% pebbles to 2mm, Light tan, dry.
MISC 6	MI6d	3/9/99	5	Sand (SP), very fine, well sorted, 5% pebbles to 2mm, medium tan, slightly damp.
MISC 8	MI8e	2/23/99	3	Sand (SP), 5% silt, fine to medium, moderately well sorted, moist, medium brown, 5% pebbles to 2 cm.
MISC 8	MI8f	2/24/99	4	Silty sand (SM) 10% silt, fine to very fine, damp, medium tan, well sorted
MISC 8	MI8a	2/24/99	7	Sand (SP), fine, well sorted, moist, medium gray.
MISC 8	MI8h	2/24/99	1	Sand (SP), fine, well sorted, damp, greyishtan, approximately 5% pebbles to 2mm
MISC 8	MI8k	2/23/99	1	Gravelly sand (SW), fine to coarse, poorly sorted, damp, medium brown, 15% gravel to 15mm.
MISC 8	MI8i	2/23/99	1	Sandy silt (ML), 30% fine sand, saturated, medium orangish brown.
MISC 8	MI8c	3/9/99	2	Sand (SP), fine, well sorted, damp, greyishtan, approximately 5% pebbles to 2mm
MISC 8	MI8g	3/9/99	5	Sand (SP), medium, well sorted, damp, medium tan
PT 1	T01a	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01b	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated, fine to very fine, moist
PT 1	T01c	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT1	T01d	6/17/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01d	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01e	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01f	6/16/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated, damp
PT 1	T01g	6/16/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT1	T01h	6/16/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01m	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 1	T01n	6/16/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 2	T02a	6/11/98	5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated, with 5% 1/4" pebbles
PT 3	PT3e	2/26/99	2	Sand (SW), very fine to medium, poorly sorted, damp, medium tan, shell fragments.

Table G-1 Soil Type Descriptions for Samples Collected for Group B AOCs (Continued)
Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No	Date Collected	Depth (feet bgs)	Description
PT 3	PT3a	2/26/99	2	Sand (SP), very fine, well sorted, 5% pebbles to 2mm, medium tan, slightly damp.
PT 3	PT3b	3/1/99	2	Sand (SP), very fine, well sorted, 5% pebbles to 2mm, medium tan, slightly damp.
PT 3	PT3c	3/1/99	2	Sand (SP), very fine, well sorted, 5% pebbles to 10mm, medium tan, slightly damp.
PT 3	PT3d	3/1/99	2	Sand (SP), moderately well sorted, 70% fine to medium, 15% medium to coarse, 15% pebbles to 15 mm, slightly damp, orangish tan, shell fragments.
PT 4	T04a	6/10/98	6	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 4	T04b	6/10/98	1	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 4	T04c	6/10/98	1	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 4	T04d	6/10/98	1	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 4	T04e	6/10/98	1	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 5	T05a	6/17/98	1	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 6	T06a	6/10/98	2.5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 6	T06b	6/10/98	2.5	Sand, fine to medium grained, medium brown, moderately well sorted, saturated
PT 6	T06c	6/16/98	5	Silty sand, very fine with 30% silt, medium grayish brown, damp, well sorted
PT 6	T06d	6/16/98	5	Clayey sand, very fine with 30% clay, medium brownish gray, damp, well sorted
PT 7	T07a	6/11/98	5	Sand, fine to very fine, light brownish gray, moderately well sorted, moist, 3% 1/8" - 1/4" pebbles
PT 7	T07b	6/17/98	5	Sand, very fine to medium, medium grayish brown, poorly sorted, moist, 3% 1/8" - 1/2" pebbles
PT 7	T07c	6/17/98	5	Sand, fine to very fine, light grayish brown, well sorted, moist
PT 7	T07d	6/17/98	5	Sand, fine to very fine, light grayish brown, well sorted, moist
PT 8	T08a	6/11/98	1	Sand, fine to very fine, light grayish brown, well sorted, moist
PT 8	T08b	6/11/98	1	Silty sand, fine to very fine with 15% silt, medium grayish brown, well sorted, moist
PT 10	T10a	6/11/98	3	Sand, very fine, medium brownish gray, damp, well sorted, includes 10% clay balls, probably from separate interval
PT 10	T10b	6/11/98	3	Sand, fine to very fine with pebbles to 1/8", medium brown, damp
PT 10	T10c	6/17/98	5	Sand, fine to very fine with pebbles to 1/8", medium brown, damp
PT 10	T10d	6/17/98	0	Sand, fine to very fine with pebbles to 1/8", medium brown, damp
PT 10	T10e	6/17/98	5	Sand, fine to very fine with pebbles to 1/8", medium brown, damp
PT 11	T11a	6/11/98	1	Silty sand, very fine, 15% silt, medium gray, damp
PCB 16, 20	PC1a	6/10/98	1	Gravely sand, very fine to coarse, with 30% 1/8" - 1/2" gravel, medium gray, dry

Table G-1 Soil Type Descriptions for Samples Collected for Group B AOCs (Continued)
Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No	Date Collected	Depth (feet bgs)	Description
UST 2	US2a	2/25/99	7.5	Sand (SP), fine to medium, well sorted, very moist, medium grayish brown.
UST 4	US4a	2/25/99	8	Silty sand (SM), 15% silt, fine to medium, mosit, medium grayish brown.
UST 4	US4b	2/25/99	6	Sand (SW), <5% silt, fine to medium, poorly sorted saturated, dark grey, micaceous.
UST 4	US4f	3/10/99	1	Gravelly sand (SW), very fine to coarse, poorly sorted, 10% gravel to 15mm, damp, dark brown.
UST 4	US4a	3/5/99	9	Sand (SW), <5% silt, fine to medium, poorly sorted saturated, dark grey, micaceous.
UST 4	US4c	3/5/99	9	Sand (SP), fine <5% silt, well sorted, moist, medium grey
UST 4	US4e	3/5/99	9	Sand (SP), fine <5% silt, well sorted, moist, medium orangish brown, 5% pebbles to 1 cm
UST 4	US4g	3/5/99	1	Gravelly sand (SW) fine to coarse, 30% pebbles 2-15 cm, dry, medium greyish brown.
ADD 4	AD4a	2/25/99	2	Silty sand (SM), 10% silt, fine, well sorted, damp, medium greyish brown, 5% pebbles
ADD 4	AD4b	2/26/99	2	Gravelly sand (GW), 40% gravel 2-15mm, 60% fine sand, dry, dark brown.
ADD 5	AD5e	3/10/99	9	Silty sand (SM), 10% silt, fine, well sorted, damp, medium greyish brown, 5% pebbles
ADD 8	AD8a	2/26/99	1	Sand (SW), fine to coarse, poorly sorted, dry, medium orangish brown.
ADD 9	AD9a	2/26/99	1	Sand (SP), fine, well sorted, dry, medium tan, 5% black pebbles to 5mm.
ADD 9	AD9b	2/26/99	1	Sand (SP), fine, well sorted, dry, medium tan, 10% gravel to 10mm.
ADD 12	A12a	3/2/99	3	Sand (SP), very fine, well sorted, medium tan, slightly damp.
ADD 12	A12b	3/2/99	3	Sand (SP), very fine, well sorted, medium tan, slightly damp.
ADD 12	A12c	3/2/99	3	Sand (SP), very fine, well sorted, medium tan, slightly damp.

Notes:

ADD = Additional
AOC = Area of Concern
bgs = Below Ground Surface
HIST = Historical
ID = Identification
IUSCS = Unified Soil Classification System

APPENDIX H

INVESTIGATION-DERIVED WASTE (IDW) INVENTORY

APPENDIX H
Investigation-Derived Waste (IDW) Inventory
Long Beach Naval Shipyard

Drum Number	Date(s) IDW Generated	Matrix	Contents	Percent Full	Source	Non-hazardous	Disposition
1	June 1 to 12	Water	Decontamination water	95	1998 groundwater sampling	Yes	Treated at NEX treatment system 12 October 1998.
2	June 13 to 18	Water	Decontamination water	25	1998 groundwater sampling	Yes	Treated at NEX treatment system 12 October 1998.
3	June 1 to 18	Soil	Excess soil from borings	30	Excess soil from 1998 sampling	Yes	Disposed as nonhazardous waste 12 October 1998.
4	June 1 to 18	PPE	Gloves, plastic sheeting, filters	90	1998 sampling	Yes	Disposed as nonhazardous waste 28 August 1998.
5	February 23 to March 10	Water	Decontamination Water	50	1999 groundwater sampling	Yes	Disposed by subcontractor (Safety Kleen) as nonhazardous waste 20 May 1999.
6	February 23 to March 10	Soil	Excess soil from borings	10	Excess soil from 1999 sampling	Yes	Disposed as nonhazardous waste 20 May 1999.
7	February 23 to March 10	PPE	Gloves, plastic sheeting, filters	90	1999 sampling	Yes	Disposed by subcontractor (Safety Kleen) as nonhazardous waste 20 May 1999.
8	February 23 to March 10	Concrete coring wastewater	Concrete coring	50	1999 concrete coring	Yes	Disposed by subcontractor (Safety Kleen) as nonhazardous waste 20 May 1999.

Notes:
IDW drum storage location was inside a fenced, locked compound at Building 205.
AOC = Area of Concern
IDW = Investigation-Derived Waste Inventory
NEX = Naval Exchange
PPE = Personal Protective Equipment

APPENDIX I

LAND SURVEYING RESULTS

Table I-1
Land Surveying Results
Group B AOCs Long Beach Naval Shipyard

Northing	Easting	Elevation	Sample Identifier
1734730.27	6490792.51	2.37	T01c
1734736.61	6490815.72	2.33	T01d
1734704.23	6490822.91	3.96	T01f
1734701.07	6490815.99	3.95	T01k
1734613.65	6490824.59	3.92	T01g
1734657.70	6490903.96	0.46	T01c
1734716.72	6490882.13	0.15	T01b
1734770.74	6490863.73	-0.15	T01a
1734843.02	6491657.55	-1.75	T02a
1734795.92	6491571.43	-1.83	T10b
1734870.72	6491484.15	-2.14	M5Fd
1734846.87	6491474.40	-2.00	M5Fb
1734875.32	6491458.84	-2.15	M5Fc
1734918.97	6491482.19	-2.37	M5Fa
1734778.78	6491553.28	-1.65	T10a
1734745.90	6491563.94	-1.48	T10c
1734519.07	6491524.79	-0.05	T11a
1734692.24	6491218.36	0.10	PC2a
1734123.86	6491651.59	1.89	PC1a
1734638.99	6491891.65	-1.33	T07a
1734619.15	6491859.05	-1.03	T07b
1734585.98	6491884.33	-0.91	T07c
1734338.08	6492094.26	0.12	T08a
1734324.00	6492094.99	0.24	T08b
1734135.33	6491660.03	1.78	PC1p
1733798.71	6491911.99	3.24	T06a
1733774.47	6491920.00	3.30	T06b
1733761.16	6491894.60	7.56	T06c
1733767.11	6491903.91	7.56	T06d
1733944.95	6492194.17	1.35	T05a
1734129.07	6492429.97	-0.16	T04a
1734132.43	6492475.04	-0.71	T04b
1734063.83	6492465.16	-0.08	T04c
1734092.64	6492460.94	-0.37	T04d
1734004.51	6492570.46	12.84	SWba
1733989.76	6492561.56	12.79	SWbc
1733966.81	6492541.14	12.50	SWbd
1733981.03	6492581.20	12.80	SWbb
1733957.29	6492573.27	12.80	SWbe
1734812.35	6492771.37	-5.18	A14d
1734843.83	6492771.53	-3.61	A14b
1734861.85	6492764.82	-3.53	A14a
1734867.94	6492782.28	-3.54	A14c
1735236.19	6493105.10	17.22	HI1b
1735514.16	6493282.44	17.21	HI1a
1735213.92	6493941.25	17.83	A12a
1735211.48	6493935.77	17.88	A12b
1735209.06	6493929.64	17.80	A12c
1735383.94	6493671.64	16.64	HI1c

Table I-1 (continued)
Land Surveying Results
Group B AOCs Long Beach Naval Shipyard

Northing	Easting	Elevation	Sample Identifier
1735482.93	6493835.28	17.29	HI1d
1734142.21	6493979.40	19.27	HI1i
1734206.08	6493798.49	19.55	HI1j
1734374.20	6493465.01	19.72	HI1g
1734606.79	6493387.28	14.14	HI1e
1734109.92	6493399.87	16.64	HI1h
1734377.25	6493283.15	16.13	HI1f
1733838.56	6492475.35	7.54	SWbg
1733773.17	6492211.93	3.29	HI9b
1734053.35	6491863.66	1.81	AD5a
1734101.74	6492050.25	1.22	AD5c
1733822.21	6492199.06	2.86	HI9a
1734484.02	6491936.80	-0.47	PT3a
1734448.51	6491962.55	-0.08	PT3c
1734446.31	6491942.91	0.00	PT3b
1734731.58	6492037.95	-1.12	US4s
1734735.76	6492012.86	-0.71	US4g
1734673.88	6492036.66	-2.05	US4h
1734433.72	6491981.63	-0.55	PT3e
1734267.19	6492283.76	0.49	M4Wb
1734014.60	6492330.23	1.82	M4Fa
1733966.78	6492268.09	2.17	M4Wa
1734893.15	6491494.09	-2.27	T10d
1734858.08	6491437.43	-2.04	M1Pa
1734732.66	6491470.95	-1.17	M1Wa
1734777.00	6491298.37	-1.17	M1Dc
1734731.49	6491294.54	-0.83	M1Db
1734756.19	6491280.86	-0.73	M1Da
1734754.30	6491745.27	-1.58	M2Wa
1734889.40	6491790.31	-2.19	MI6d
1734906.80	6491783.54	-2.29	MI6b
1734900.98	6491766.46	-2.29	MI6a
1734887.09	6491764.47	-2.20	MI6c
1735080.07	6491761.35	-2.17	US2a
1733954.83	6491581.92	2.58	AD4b
1734347.55	6491199.85	2.06	HI8a
1734389.01	6491173.98	2.19	HI8c
1734416.88	6491230.61	0.90	HI8b
1734011.00	6491617.01	2.13	AD4a
1733409.94	6491307.31	6.96	A13b
1733406.61	6491297.45	6.93	A13a
1733319.49	6491265.19	6.04	A13c
1734097.41	6491964.53	5.47	AD5b
1733979.06	6491993.55	6.12	AD5d
1734003.60	6492052.16	5.88	AD5e
1734912.49	6492028.37	-2.34	US4b
1734921.16	6491958.02	-0.87	US4a
1734847.47	6491976.96	-0.91	US4d
1734858.72	6492012.39	-0.90	US4c

Table I-1 (continued)
Land Surveying Results
Group B AOCs Long Beach Naval Shipyard

Northing	Easting	Elevation	Sample Identifier
1734836.12	6491942.34	-0.90	US4e
1734001.06	6490644.97	4.57	AD9a
1734012.23	6490652.39	4.93	AD9b
1734028.36	6490711.80	4.22	AD8a
1734353.34	6489860.48	6.11	HI2a
1734277.59	6490233.86	4.74	MI8d
1734214.43	6490146.71	5.90	MI8e
1734188.39	6490162.08	5.81	MI8f
1734121.01	6490253.26	4.25	MI8g
1734258.89	6490015.16	6.05	MI8i
1734133.69	6490044.47	5.33	MI8j
1734205.58	6489899.57	5.84	MI8k
1734406.68	6490157.71	5.14	MI8a
1734381.61	6490146.16	5.25	MI8b
1734298.54	6490208.21	5.50	MI8c
1733978.09	6490223.90	6.01	MI8h
1734907.85	6491111.53	-1.79	S1na
1734881.87	6491098.66	-1.53	S1nb
1734871.70	6491068.56	-1.21	S1ng
1734895.25	6491073.52	-1.52	S1nc
1734922.51	6491083.30	-1.30	S1nd
1734932.09	6491109.25	-1.43	S1nh
1734880.62	6491031.05	-1.25	S1nf

Notes:

AOCs = Areas of Concern

The horizontal coordinates (i.e., nothings and eastings) are reported using the State Plane Coordinate System, North America Datum (NAD) 83, Lambert Zones 1 to 6 as appropriate. The vertical datum (i.e., elevation) are reported using Mean Lower Low Water (MLLW) in feet.

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APPENDIX J

FIELD QUALITY CONTROL (QC) SAMPLE RESULTS

APPENDIX J
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Table J-1
Field QC Blank Sample Results for 1998 Sampling Event
June 1998

Type	Equipment Rinsate bailer[a]	Equipment Rinsate groundwater tubing	Equipment Rinsate soil sampling equipment	Field Blank		Trip Blanks[b] (8 total)
				Water	Wipe	
Sample Name	**98SY-RE2e-W-10**	**98SY-ER1b-W-10.6**	**98SY-RE2f-W-10**	**98SY-BF1a-W-9**	**98SY-BF1b-P-0**	
Date collected	**6/17/98**	**6/5/98**	**6/17/98**	**6/5/98**	**6/17/98**	**6/10/98 to 6/18/98**
Concentration	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/100 cm^2**	**mg/L**
VOCs						
Chloroform	ND	N/A	0.001J	0.001J	N/A	ND
Methylene Chloride	ND	N/A	ND	0.001J	N/A	0.006J, 0.001J, 0.001J
Toluene	ND	N/A	0.0008J	ND	N/A	ND
SVOCs	ND[d]	ND	N/A[d]	ND	N/A	N/A
PCBs	ND[d]	ND	N/A[d]	ND	ND	N/A
TPH-gasoline	ND	N/A	ND	0.02	N/A	N/A
TPH-diesel	ND	N/A	0.04J	ND	N/A	N/A
TPH-motor oil	ND	N/A	ND	ND	N/A	N/A
Cyanide	ND[d]	N/A	N/A[d]	N/A	N/A	N/A
Cr^{+6}	ND[d]	N/A	N/A[d]	N/A	N/A	N/A
Metals[c]						N/A
Antimony	ND	0.0027J	N/A	ND	N/A	N/A
Arsenic	ND	ND	N/A	ND	N/A	N/A
Barium	ND	0.0053J	N/A	0.0013J	N/A	N/A
Beryllium	ND	0.00035J	N/A	ND	N/A	N/A
Cadmium	ND	0.00027J	N/A	ND	N/A	N/A
Chromium	ND	0.0033J	N/A	ND	N/A	N/A
Cobalt	ND	0.0016J	N/A	ND	N/A	N/A
Copper	ND	0.0071J	N/A	0.0028J	N/A	N/A
Lead	ND	0.0044J	N/A	ND	N/A	N/A

Table J-1 (continued)
Field QC Blank Sample Results for 1998 Sampling Event
June 1998

Type	Equipment Rinsate bailer[a]	Equipment Rinsate groundwater tubing	Equipment Rinsate soil sampling equipment	Field Blank		Trip Blanks[b] (8 total)
				Water	Wipe	
Sample Name	**98SY-RE2e-W-10**	**98SY-ER1b-W-10.6**	**98SY-RE2f-W-10**	**98SY-BF1a-W-9**	**98SY-BF1b-P-0**	
Date collected	**6/17/98**	**6/5/98**	**6/17/98**	**6/5/98**	**6/17/98**	**6/10/98 to 6/18/98**
Concentration	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/100 cm^2**	**mg/L**
Mercury	ND	ND	N/A	ND	N/A	N/A
Molybdenum	ND	0.0034J	N/A	ND	N/A	N/A
Nickel	ND	0.0018J	N/A	ND	N/A	N/A
Selenium	ND	0.0015J	N/A	ND	N/A	N/A
Silver	ND	ND	N/A	ND	N/A	N/A
Thallium	ND	0.0088J	N/A	ND	N/A	N/A
Vanadium	ND	0.002J	N/A	ND	N/A	N/A
Zinc	ND	0.0119	N/A	0.0025J	N/A	N/A

Notes:

(a) Analyzed for VOCs and TPH-gasoline only.
(b) Analyzed for VOCs only.
(c) Unfiltered, represents total metals.
(d) Laboratory mistakenly analyzed sample 98SY-RE2e-W-10 instead of 98SY-RE2f-W-10 for SVOCs, PCBs, cyanide, and Cr^{+6}. Reported results provide information that is somewhat relevant as a field blank and somewhat representative as equipment rinsate.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated concentration
LBNSY = Long Beach Naval Shipyard
mg/L = milligrams per Liter
N/A = Not Analyzed
ND = Not Detected
PCBs = Polychlorinated Biphenyls
QC = Quality Control
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds
ug/100 cm^2 = Micrograms per 100 square centimeters

Table J-2
Field QC Blank Sample Results for 1999 Sampling Event
February/March 1999

Type	Equipment Rinsate bailer[a]	Equipment Rinsate groundwater tubing	Equipment Rinsate soil sampling equipment	Field Blank		Trip Blanks[b] (13 total)
				Water	Wipe	
Sample Name	99SY-RE2h-W-10	98SY-ER1b-W-10.6	99SY-RE3g-W-10	99SY-BF1c-W-10	99SY-BF1d-P-0	
Date collected	3/2/99	6/5/98	3/2/99	3/2/99	3/9/99	2/23/99 to 3/10/99
Concentration	mg/L	mg/L	mg/L	mg/L	ug/100 cm^2	mg/L
VOCs						
Chloroform	ND	N/A	ND	ND	N/A	0.011, 0.008, 0.011, 0.013, 0.015J, 0.015, 0.011, 0.011, 0.015, 0.008
SVOCs	N/A	ND	ND	ND	N/A	ND
PCBs	N/A	ND	ND	ND	ND	ND
TPH-gasoline	ND	N/A	ND	ND	N/A	ND
TPH-diesel	N/A	N/A	0.03J	0.02J	N/A	ND
TPH-motor oil	N/A	N/A	ND	ND	N/A	ND
Cyanide	N/A	N/A	ND	ND	N/A	ND
Cr^{+6}	N/A	N/A	ND	ND	N/A	ND
Metals[c]						
Antimony	N/A	0.0027J	ND	ND	N/A	ND
Arsenic	N/A	ND	ND	ND	N/A	ND
Barium	N/A	0.0053J	ND	ND	N/A	ND
Beryllium	N/A	0.00035J	ND	ND	N/A	ND
Cadmium	N/A	0.00027J	ND	ND	N/A	ND
Chromium	N/A	0.0033J	0.0006	0.0036	N/A	ND
Cobalt	N/A	0.0016J	ND	ND	N/A	ND
Copper	N/A	0.0071J	0.0029	ND	N/A	ND
Lead	N/A	0.0044J	ND	ND	N/A	ND

Table J-2 (continued)
Field QC Blank Sample Results for 1999 Sampling Event
February/March 1999

Type	Equipment Rinsate bailer[a]	Equipment Rinsate groundwater tubing	Equipment Rinsate soil sampling equipment	Field Blank		Trip Blanks[b] (13 total)
				Water	Wipe	
Sample Name	**99SY-RE2h-W-10**	**98SY-ER1b-W-10.6**	**99SY-RE3g-W-10**	**99SY-BF1c-W-10**	**99SY-BF1d-P-0**	
Date collected	**3/2/99**	**6/5/98**	**3/2/99**	**3/2/99**	**3/9/99**	**2/23/99 to 3/10/99**
Concentration	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/100 cm^2**	**mg/L**
Mercury	N/A	ND	0.00011	0.00022	N/A	ND
Molybdenum	N/A	0.0034J	ND	ND	N/A	ND
Nickel	N/A	0.0018J	0.0013	ND	N/A	ND
Selenium	N/A	0.0015J	ND	ND	N/A	ND
Silver	N/A	ND	ND	0.00091	N/A	ND
Thallium	N/A	0.0088J	ND	ND	N/A	ND
Vanadium	N/A	0.002J	ND	ND	N/A	ND
Zinc	N/A	0.0119	0.0035	0.004	N/A	ND

Notes:

(e) Analyzed for VOCs and TPH-gasoline only.
(f) Analyzed for VOCs only.
(g) Unfiltered, represents total metals.

AOC = Area of Concern
Cr^{+6} = Hexavalent Chromium
J = Estimated concentration
LBNSY = Long Beach Naval Shipyard
mg/L = milligrams per Liter
N/A = Not Analyzed
ND = Not Detected
PCBs = Polychlorinated Biphenyls
QC = Quality Control
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
ug/100 cm^2 = Micrograms per hundred square centimeters
VOCs = Volatile Organic Compounds

Table J-3
Field QC Samples List and Analysis Matrix
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples							Analytical Parameters											Description
			Soil	Groundwater	Rinsate	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D	Mercury	Cr+6	Dioxins	
Duplicate soil samples																					
PT 4	98SY-T04e-S-1	6/10/98	X							X		X		X	X				X		Duplicate of 98SY-T04c-S-1
PT 1	98SY-T01e-S-5	6/11/98	X							X		X		X	X				X		Duplicate of 98SY-T01c-S-5
PT 10	98SY-T10e-S-5	6/17/98	X							X	X	X	X			X	X				Duplicate of 98SY-T10c-S-5
HIST 1	99SY-HI1k-S-6	3/3/99	X								X	X				X					Duplicate of 99SY-HI1a-S-6
HIST 8	99SY-HI8d-S-1	2/25/99	X							X	X	X	X		X	X					Duplicate of 99SY-HI8a-S-1
MISC 8	99SY-MI8m-S-7	2/24/99	X							X	X	X	X	X		X	X				Duplicate of 99SY-MI8b-S-7
MISC 8	99SY-MI8n-S-1	2/23/99	X							X	X	X	X	X		X	X				Duplicate of 99SY-MI8k-S-1
UST 4	99SY-US4k-S-9	3/5/99	X							X	X	X									Duplicate of 99SY-US4c-S-9
ADD 5	99SY-AD5f-S-6	3/1/99	X							X	X	X			X	X	X				Duplicate of 99SY-AD5c-S-6
Duplicate sediment samples																					
ADD 13	99SY-A13e-S-1.5	3/5/99					X			X	X	X	X			X					Duplicate of 99SY-A13c-S-1.5 for metals
Duplicate water samples																					
PT 4	98SY-T04e-W-3.5	6/10/98		X						X		X		X	X				X		Duplicate of 98SY-T04c-W-3.5
PT 1	98SY-T01e-W-10.7	6/11/98		X						X		X		X	X				X		Duplicate of 98SY-T01c-W-10.7
PT 10	98SY-T10e-W-10	6/17/98		X							X		X			X	X				Duplicate of 98SY-T10c-W-10
HIST 1	99SY-HI1k-W-27.2	3/3/99		X							X	X				X					Duplicate of 99SY-HI1a-W-27.2
HIST 8	99SY-HI8d-W-11.4	2/25/99		X						X	X	X	X		X	X					Duplicate of 99SY-HI8a-W-11.4
MISC 8	99SY-MI8m-W-10.9	2/24/99		X						X	X	X	X	X		X	X				Duplicate of 99SY-MI8b-W-10.9
MISC 8	99SY-MI8n-W-10.2	2/23/99		X						X	X	X	X	X		X	X				Duplicate of 99SY-MI8k-W-10.2
UST 4	99SY-US4k-W-10.2	3/5/99		X						X	X	X									Duplicate of 99SY-US4c-W-10.2
ADD 5	99SY-AD5f-W-13.5	3/1/99		X						X	X	X			X	X	X				Duplicate of 99SY-AD5c-W-13.5
Duplicate liquid samples																					
MISC 1	98SY-M1Db-L-5	6/16/98				X							X			X	X				Duplicate of 98SY-M1Da-L-5
PT 1	98SY-T01m-W-5	6/16/98		X						X	X	X		X	X				X		Duplicate of 98SY-T01k-W-5
PT 1	98SY-T01m-W-10	6/11/98		X						X		X		X	X				X		Duplicate of 98SY-T01k-W-10

Table J-3 (continued)
Field QC Samples List and Analysis Matrix
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples							Analytical Parameters											Description
			Soil	Groundwater	Rinsate	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D	Mercury	Cr+6	Dioxins	
Duplicate PCB wipe samples																					
MISC 1	98SY-PC2c-P-0	6/17/98							X				X								Duplicate of 98SY-PC2a-P-0
Duplicate wood block sample																					
MISC 4	98SY-MW4c-B-0	6/18/98				X				X	X	X	X	X		X	X				
Field Blank																					
	98SY-BF1a-W-9	6/5/98				X				X	X	X	X			X	X				
	98SY-BF1b-P-0	6/17/98							X				X								
	99SY-BF1c-W-10	3/2/99				X				X	X	X	X	X	X	X	X				
	99SY-BF1d-P-0	3/9/99							X				X								
Equipment Rinsates																					
	98SY-RE2f-W-10	6/17/98			X					X						X	X				Soil sampling equipment
	98SY-RE2e-W-10	6/17/98			X					X	X(a)	X(a)	X(a)	X(a)		X	X		X(a)		Bailer for water samples
	98SY-ER1b-W-10.6	6/5/98			X						X	X	X								Tubing for water samples
	99SY-RE3g-W-10	3/2/99			X					X	X	X	X	X	X	X	X				Soil sampling equipment
	99SY-RE3h-W-10	3/2/99			X					X							X				Bailer for water samples
Trip blanks																					
	98SY-BT1h-W-12.1	6/10/98		X						X											
	98SY-BT1J-W-10	6/11/98		X						X											
	98SY-BT1k-W-10	6/16/98		X						X											
	98SY-BT1l-W-10	6/17/98		X						X											
	98SY-BT1m-W-10	6/18/98		X						X											
	99SY-BT1n-W-10	2/23/99		X						X											
	99SY-BT1o-W-10	2/24/99		X						X											
	99SY-BT1p-W-10	2/25/99		X						X											
	99SY-BT1q-W-7	2/26/99		X						X											
	99SY-BT1r-W-9	3/1/99		X						X											
	99SY-BT1s-W-8	3/2/99		X						X											

Table J-3 (continued)
Field QC Samples List and Analysis Matrix
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples							Analytical Parameters											Description
			Soil	Groundwater	Rinsate	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D	Mercury	Cr+6	Dioxins	
	99SY-BT1t-W-10	3/5/99		X						X											
	99SY-BT1u-W-10	3/8/99		X						X											
	99SY-BT1v-W-8	3/9/99		X						X											
	99SY-BT1w-W-11	3/10/99		X						X											Recorded as 99SY-BT1w-11 on COC.

Notes:

Sampling at three AOCs (ADD 3, ADD 6, and ADD 7) was performed by the Port of Long Beach and these AOCs are addressed in Appendix P.

(a) Laboratory mistakenly analyzed sample 98SY-REef-W-10 instead of 98SY-RE2f-W-10.

ADD = Additional
AOC = Area of Concern
Bldg. = building
Cr+6 = Hexavalent Chromium
CN = Cyanide
HIST = Historical
I.D. = Identification
MISC = Miscellaneous
No. = Number
PCBs = Polychlorinated Biphenyls
PT = Plating Shop
SVOCs = Semivolatile Organic Compounds
TPH-G = Total Petroleum Hydrocarbons - Gasoline
TPH-D = Total Petroleum Hydrocarbons - Diesel
TPH-M = Total Petroleum Hydrocarbons - Motor Oil
VOCs = Volatile Organic Compounds
UST = Underground Storage Tank

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APPENDIX K
SAMPLING AND ANALYSIS MATRIX

Table K-1
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters										
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Building 128 Wood Block Floors, soil sample, liquid sample, PCB wipe																			
MISC 1	98SY-M1Da-L-5	6/16/98			X				X	X	X	X	X	X	X	X		X	
MISC 1	98SY-M1Pa-S-0	6/17/98	X						X	X	X	X			X	X			
MISC 1	98SY-M1Wa-B-0	6/18/98					X		X	X	X	X	X		X	X			
MISC 1	98SY-PC2a-P-0	6/17/98						X				X							
Building 129 Wood Block Floors																			
MISC 2	98SY-M2Wa-B-0	6/18/98					X		X	X	X	X	X		X	X			
Building 132 Wood Block Floors, liquid sample																			
MISC 4	98SY-M4Wa-B-0	6/18/98					X		X	X	X	X	X		X	X			X
MISC 4	98SY-M4Wb-B-0	6/18/98					X		X	X	X	X	X		X	X			
MISC 4	98SY-M4Fa-L-0.5	6/17/98			X				X	X	X	X	X		X	X			
Building 128 Dirt Floor-Foundry/Heat Treatment																			
MISC 5	98SY-M5Fa-S-0	6/17/98	X								X								
MISC 5	98SY-M5Fb-S-0	6/17/98	X								X								
MISC 5	98SY-M5Fc-S-0	6/17/98	X								X								
MISC 5	98SY-M5Fd-S-0	6/17/98	X								X								
MISC 5	98SY-M5Fe-S-0	6/17/98	X								X								
Building 210 Plating Shop																			
PT 1	98SY-T01a-S-5	6/11/98	X						X		X		X	X				X	
PT 1	98SY-T01a-W-7	6/11/98		X					X		X		X	X				X	
PT 1	98SY-T01b-S-5	6/11/98	X						X		X		X	X				X	
PT 1	98SY-T01b-W-9	6/11/98		X					X		X		X	X				X	
PT 1	98SY-T01c-S-5	6/11/98	X						X		X		X	X				X	
PT 1	98SY-T01c-W-10	6/11/98		X					X		X		X	X				X	
PT 1	98SY-T01d-S-5	6/11/98	X						X		X		X	X				X	
PT 1	98SY-T01d-W-12.4	6/11/98		X					X		X		X	X				X	
PT 1	98SY-T01f-S-5	6/16/98	X						X	X	X		X	X				X	
PT 1	98SY-T01f-W-9	6/16/98		X					X	X	X		X	X				X	
PT 1	98SY-T01g-S-5	6/16/98	X						X		X		X	X				X	
PT 1	98SY-T01g-W-12	6/16/98		X					X		X		X	X				X	
PT 1	98SY-T01k-W-5	6/16/98			X				X	X	X		X	X				X	
PT 1	98SY-T01m-W-10	6/11/98		X					X		X		X	X				X	
PT 1	98SY-T01n-S-5	6/16/98	X						X		X		X	X				X	
PT 1	98SY-T01n-W-12	6/16/98		X					X		X		X	X				X	
Building 129 Plating Shop																			
PT 2	98SY-T02a-S-5	6/11/98	X						X		X		X	X				X	
PT 2	98SY-T02a-W-11.3	6/11/98		X					X		X		X	X				X	
Building 132 Cleaning/Plating Shop																			
PT 4	98SY-T04a-S-6	6/10/98	X						X		X		X	X				X	
PT 4	98SY-T04a-W-12.1	6/10/98		X					X		X		X	X				X	
PT 4	98SY-T04b-S-1	6/10/98	X						X		X		X	X				X	

Table K-1 (continued)
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters										
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Building 132 Cleaning/Plating Shop (continued)																			
PT 4	98SY-T04b-W-2	6/10/98		X					X		X		X	X				X	
PT 4	98SY-T04c-S-1	6/10/98	X						X		X		X	X				X	
PT 4	98SY-T04c-W-3.5	6/10/98		X					X		X		X	X				X	
PT 4	98SY-T04d-S-1	6/10/98	X						X		X		X	X				X	
Building 132 Plating Shop																			
PT 5	98SY-T05a-S-1	6/17/98	X						X		X		X	X				X	
PT 5	98SY-T05a-W-7	6/17/98		X					X		X		X	X				X	
Building 130 Sheet Metal Cleaning/Plating Shop																			
PT 6	98SY-T06a-S-2.5	6/10/98	X						X		X		X	X				X	
PT 6	98SY-T06a-W-7	6/10/98		X					X		X		X	X				X	
PT 6	98SY-T06b-S-2.5	6/10/98	X						X		X		X	X				X	
PT 6	98SY-T06b-W-8.2	6/10/98		X					X		X		X	X				X	
PT 6	98SY-T06c-S-5	6/16/98	X						X		X		X	X				X	
PT 6	98SY-T06c-W-12	6/16/98		X					X		X		X	X				X	
PT 6	98SY-T06d-S-5	6/16/98	X						X		X		X	X				X	
Building 129 Cleaning Dip Tanks																			
PT 7	98SY-T07a-S-5	6/11/98	X						X		X								
PT 7	98SY-T07b-S-5	6/17/98	X						X		X								
PT 7	98SY-T07c-S-5	6/17/98	X						X		X								
Tin Dip Tanks Building 132																			
PT 8	98SY-T08a-S-1	6/11/98	X								X								
PT 8	98SY-T08b-S-1	6/11/98	X								X								
Quenching Tanks Building 128																			
PT 10	98SY-T10a-S-3	6/11/98	X						X	X	X	X			X	X			
PT 10	98SY-T10a-W-12	6/11/98		X					X	X	X	X			X	X			
PT 10	98SY-T10b-S-3	6/11/98	X						X	X	X	X			X	X			
PT 10	98SY-T10b-W-12.6	6/11/98		X					X	X	X	X			X	X			
PT 10	98SY-T10c-S-5	6/17/98	X						X	X	X	X			X	X			
PT 10	98SY-T10c-W-10	6/17/98		X					X	X	X	X			X	X			
PT 10	98SY-T10d-S-0	6/17/98	X						X	X	X	X			X	X			X
Plasma Arc Cutting Tank Building 128																			
PT 11	98SY-T11a-S-1	6/11/98	X								X								
PT 11	98SY-T11a-W-15.3	6/11/98		X							X								
Ventilation Gasket Removal, PCB Gaskets and Coveralls, and Painting Area																			
PCB 16, 20	98SY-PC1a-S-1.0	6/10/98	X						X		X								
PCB 16, 20	98SY-PC1a-W-10	6/10/98		X					X		X								
PCB 16, 20	98SY-PC1a-P-0	6/17/98						X				X							
Former and Current Oil Production Areas (HIST 1)																			
HIST 1	99SY-HI1a-W-27.2	3/3/99		X						X	X					X			
HIST 1	99SY-HI1a-S-6	3/3/99	X							X	X					X			

Table K-1 (continued)
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters									
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Former and Current Oil Production Areas (HIST 1) (continued)																			
HIST 1	99SY-HI1b-W-25.9	3/3/99		X						X	X					X			
HIST 1	99SY-HI1b-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1c-W-23.2	3/3/99		X						X	X					X			
HIST 1	99SY-HI1c-S-4	3/3/99	X							X	X					X			
HIST 1	99SY-HI1d-W-24	3/3/99		X						X	X					X			
HIST 1	99SY-HI1d-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1e-W-18.7	3/3/99		X						X	X					X			
HIST 1	99SY-HI1e-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1f-W-18	3/3/99		X						X	X					X			
HIST 1	99SY-HI1f-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1g-W-22.1	3/3/99		X						X	X					X			
HIST 1	99SY-HI1g-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1h-W-16.3	3/3/99		X						X	X					X			
HIST 1	99SY-HI1h-S-5	3/3/99	X							X	X					X			
HIST 1	99SY-HI1i-W-25	3/4/99		X						X	X					X			
HIST 1	99SY-HI1i-S-5	3/4/99	X							X	X					X			
HIST 1	99SY-HI1j-W-30	3/4/99		X						X	X					X			
HIST 1	99SY-HI1j-S-5	3/4/99	X							X	X					X			
Former Acetylene Generating Plant and Sludge Pit (HIST 2)																			
HIST 2	99SY-HI2a-W-11	2/24/99		X										X					
HIST 2	99SY-HI2a-S-7	2/24/99	X											X					
Former Chemical Cleaning Area (HIST 8)																			
HIST 8	99SY-HI8a-W-11.4	2/25/99		X					X	X	X	X		X		X			
HIST 8	99SY-HI8a-S-1	2/25/99	X						X	X	X	X		X		X			
HIST 8	99SY-HI8b-W-10.1	2/25/99		X					X	X	X	X		X		X			
HIST 8	99SY-HI8b-S-1	2/25/99	X						X	X	X	X		X		X			
HIST 8	99SY-HI8c-W-11.4	2/25/99		X					X	X	X	X		X		X			
HIST 8	99SY-HI8c-S-1	2/25/99	X						X	X	X	X		X		X			
Former Storage Area for Scrap Metal and Oils (HIST 9)																			
HIST 9	99SY-HI9a-W-5	3/5/99		X					X	X	X	X				X			
HIST 9	99SY-HI9a-S-1	3/5/99	X						X	X	X	X				X			
HIST 9	99SY-HI9b-W-6.0	3/5/99		X					X	X	X	X				X			
HIST 9	99SY-HI9b-S-1	3/5/99	X						X	X	X	X				X			
Diesel Test Cells including USTs 129.3 to 129.9 (MISC 6)																			
MISC 6	99SY-MI6a-W-11.2	3/1/99		X					X	X	X					X			
MISC 6	99SY-MI6a-S-5	3/1/99	X						X	X	X					X			
MISC 6	99SY-MI6b-W-12.1	3/1/99		X					X	X	X					X			
MISC 6	99SY-MI6b-S-5	3/1/99	X						X	X	X					X			
MISC 6	99SY-MI6c-W-10	3/8/99		X					X	X	X					X			
MISC 6	99SY-MI6c-S-5	3/8/99	X						X	X	X					X			

Table K-1 (continued)
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters										
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Diesel Test Cells including USTs 129.3 to 129.9 (MISC 6) (continued)																			
MISC 6	99SY-MI6d-W-10.6	3/9/99		X					X	X	X					X			
MISC 6	99SY-MI6d-S-5	3/9/99	X						X	X	X					X			
Transportation Facility Yard (MISC 8)																			
MISC 8	99SY-MI8a-W-10.9	2/24/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8a-S-7	2/24/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8b-W-10.9	2/24/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8b-S-7	2/24/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8c-W-12	3/9/99		X					X						X				
MISC 8	99SY-MI8c-S-2	3/9/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8d-W-11.5	2/23/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8d-S-3	2/23/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8e-W-13.4	2/23/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8e-S-3	2/23/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8f-W-11	2/24/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8f-S-4	2/24/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8g-W-9	3/9/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8g-S-5	3/9/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8h-W-10.8	2/24/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8h-S-1	2/24/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8i-W-11	2/23/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8i-S-1	2/23/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8j-W-11.7	2/24/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8j-S-5	2/24/99	X						X	X	X	X	X		X	X			
MISC 8	99SY-MI8k-W-10.2	2/23/99		X					X	X	X	X	X		X	X			
MISC 8	99SY-MI8k-S-1	2/23/99	X						X	X	X	X	X		X	X			
Equipment with Potential for PCB Oils (PCB 17)																			
PCB 17	99SY-P17a-P-0	3/9/99						X				X							
PCB 17	99SY-P17b-P-0	3/9/99						X				X							
PCB 17	99SY-P17c-P-0	3/9/99						X				X							
PCB 17	99SY-P17d-P-0	3/9/99						X				X							
Cleaning Tanks (PT 3)																			
PT 3	99SY-PT3a-W-9	2/26/99		X					X	X	X	X				X			
PT 3	99SY-PT3a-S-2	2/26/99	X						X	X	X	X				X			
PT 3	99SY-PT3b-W-8.5	3/1/99		X					X	X	X	X				X			
PT 3	99SY-PT3b-S-2	3/1/99	X						X	X	X	X				X			
PT 3	99SY-PT3c-W-12	3/1/99		X					X	X	X	X				X			
PT 3	99SY-PT3c-S-2	3/1/99	X						X	X	X	X				X			
PT 3	99SY-PT3d-W-12	3/1/99		X					X	X	X	X				X			

Table K-1 (continued)
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters										
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Cleaning Tanks (PT 3) (continued)																			
PT 3	99SY-PT3d-S-2	3/1/99	X						X	X	X	X				X			
PT 3	99SY-PT3e-W-14.4	2/26/99		X					X	X	X	X				X			
PT 3	99SY-PT3e-S-2	2/26/99	X						X	X	X	X				X			
Tank 216.1 (UST 2)																			
UST 2	99SY-US2a-W-9.6	2/25/99		X					X	X	X								
UST 2	99SY-US2a-S-7.5	2/25/99	X						X	X	X								
Tanks 202.1, 202.2, and 202.3 (UST 4)																			
UST 4	99SY-US4a-W-11.3	2/25/99		X					X	X	X								
UST 4	99SY-US4a-S-8	2/25/99	X						X	X	X								
UST 4	99SY-US4b-W-8.1	2/25/99		X					X	X	X								
UST 4	99SY-US4b-S-6	2/25/99	X						X	X	X								
UST 4	99SY-US4c-W-10.2	3/5/99		X					X	X	X								
UST 4	99SY-US4c-S-9	3/5/99	X						X	X	X								
UST 4	99SY-US4d-W-8	3/5/99		X					X	X	X								
UST 4	99SY-US4d-S-9	3/5/99	X						X	X	X								
UST 4	99SY-US4e-W-12	3/5/99		X					X	X	X								
UST 4	99SY-US4e-S-9	3/5/99	X						X	X	X								
UST 4	99SY-US4f-S-1	3/10/99	X						X	X	X								
UST 4	99SY-US4g-S-1	3/5/99	X						X	X	X								
UST 4	99SY-US4h-S-3	3/5/99				X			X	X	X								
Building 109 (ADD 4)																			
ADD 4	99SY-AD4a-W-10.8	2/25/99		X					X	X	X			X					
ADD 4	99SY-AD4a-S-2	2/25/99	X						X	X	X			X					
ADD 4	99SY-AD4b-W-11.7	2/26/99		X					X	X	X			X					
ADD 4	99SY-AD4b-S-2	2/26/99	X						X	X	X			X					
Process Tanks at Building 131 (ADD 5)																			
ADD 5	99SY-AD5a-W-13.5	3/1/99		X					X	X	X			X	X	X			
ADD 5	99SY-AD5a-S-6	3/1/99	X						X	X	X			X	X	X			
ADD 5	99SY-AD5b-S-1	3/10/99	X						X	X	X			X	X	X			
ADD 5	99SY-AD5c-W-13.5	3/1/99		X					X	X	X			X	X	X			
ADD 5	99SY-AD5c-S-6	3/1/99	X						X	X	X			X	X	X			
ADD 5	99SY-AD5d-W-11.8	3/10/99		X					X	X	X			X	X	X			
ADD 5	99SY-AD5d-S-9	3/10/99	X						X	X	X			X	X	X			
ADD 5	99SY-AD5e-W-12	3/10/99		X					X	X	X			X	X	X			
ADD 5	99SY-AD5e-S-9	3/10/99	X						X	X	X			X	X	X			
Storage Area, Temporary Building 2 (ADD 8)																			
ADD 8	99SY-AD8a-W-13	2/26/99		X					X	X	X	X		X	X	X			
ADD 8	99SY-AD8a-S-1	2/26/99	X						X	X	X	X		X	X	X			

Table K-1 (continued)
Field Samples Collected
Group B AOCs Long Beach Naval Shipyard

AOC No.	Field Sample I.D. No.	Date Collected	Number of Samples						Analytical Parameters										
			Soil	Groundwater	Liquid	Sediment	Wood	Wipe	VOCs	SVOCs	Metals	PCBs	CN	pH	TPH-G	TPH-D, -M	Mercury	Cr+6	Dioxins
Storage Area, Temporary Building 3 (ADD 9)																			
ADD 9	99SY-AD9a-W-13.4	2/26/99		X					X	X	X	X		X	X	X			
ADD 9	99SY-AD9a-S-1	2/26/99	X						X	X	X	X		X	X	X			
ADD 9	99SY-AD9b-W-14	2/26/99		X					X	X	X	X		X	X	X			
ADD 9	99SY-AD9b-S-1	2/26/99	X						X	X	X	X		X	X	X			
Building 197 Mercury Gage Repair Area (ADD 12)																			
ADD 12	99SY-A12a-W-21.4	3/2/99		X													X		
ADD 12	99SY-A12a-S-3	3/2/99	X														X		
ADD 12	99SY-A12b-W-20.9	3/2/99		X													X		
ADD 12	99SY-A12b-S-3	3/2/99	X														X		
ADD 12	99SY-A12c-W-21.2	3/2/99		X													X		
ADD 12	99SY-A12c-S-3	3/2/99	X														X		
Mercury-Sealed Motor Pump Stand Area, Building 104 (ADD 13)																			
ADD 13	99SY-A13a-S-0	3/5/99				X					X								
ADD 13	99SY-A13b-S-1	3/5/99				X			X	X	X	X				X			
ADD 13	99SY-A13c-S-1.5	3/5/99				X					X								
ADD 13	99SY-A13e-S-1.5	3/5/99				X			X	X	X	X			X				
Mercury-Sealed Motor Pump Stand Area, Building 150 (ADD 14)																			
ADD 14	99SY-A14a-S-0	3/5/99				X					X								
ADD 14	99SY-A14b-S-1	3/5/99				X					X								
ADD 14	99SY-A14c-S-3	3/5/99				X					X								
ADD 14	99SY-A14d-S-0	3/5/99				X					X								
Dip Tanks, Building 128 (MISC 1)																			
MISC 1	99SY-M1Db-W-10.8	3/8/99		X					X		X								
MISC 1	99SY-M1Db-S-2	3/8/99	X						X		X								
MISC 1	99SY-M1Dc-W-11	3/5/99		X					X		X								
MISC 1	99SY-M1Dc-S-2	3/5/99	X						X		X								

Notes:

Sampling at three AOCs (ADD 3, ADD 6, and ADD 7) was performed by the Port of Long Beach and these AOCs are addressed in Appendix P.

ADD = Additional
AOC = Area of Concern
Bldg. = building
Cr+6 = Hexavalent Chromium
CN = Cyanide
HIST = Historical
I.D. = Identification
MISC = Miscellaneous
No. = Number
PCBs = Polychlorinated Biphenyls
PT = Plating Shop
SVOCs = Semivolatile Organic Compounds
TPH-G = Total Petroleum Hydrocarbons - Gasoline
TPH-D = Total Petroleum Hydrocarbons - Diesel
TPH-M = Total Petroleum Hydrocarbons - Motor Oil
VOCs = Volatile Organic Compounds
UST = Underground Storage Tank

APPENDIX L

BACKGROUND METALS CONCENTRATIONS

Table 3-3
Background Metal Concentrations in Soil

Metal	Statistical Background[a] (mg/kg)	Geochemical Background[b] (mg/kg)	Selected Threshold Value[c] (mg/kg)
Aluminum	32,859.7	28,850.0	28,850.0
Antimony	11.3	na	11.3
Arsenic	11.1	17.5	17.5
Barium	317.3	275.0	275.0
Beryllium	1.3	1.4	1.4
Cadmium	1.7	na	1.7
Chromium	91.2	60.9	60.9
Cobalt	17.1	24.5	24.5
Copper	798.7	na	798.7
Iron	50,011.1	48,500.0	48,500.0
Lead	185.2	na	185.2
Manganese	539.2	867.0	867.0
Mercury	2.5	na	2.5
Nickel	75.2	32.6	32.6
Selenium	1.4	na	1.4
Silver	1.5	na	1.5
Thallium	4.2	na	4.2
Vanadium	60.3	84.9	84.9
Zinc	844.9	na	844.9

Notes:
[a] Documented in calculation package number 037-ST-002
[b] Documented in Appendix J of the Remedial Investigation Report
[c] Represents the metal background value for the Long Beach Naval Shipyard Remedial Investigation. A geochemical background is selected when available; otherwise, a statistical background is used.

Acronyms:
mg/kg – milligrams per kilogram
na – not available

Table 3-2
Summary Statistics for Background Metal Concentrations in Groundwater (µg/L)

Metal	N	Mean	Standard Deviation	CV	Frequency of Detection	Percent Nondetects	Median	Distribution of Dataset	Minimum	Maximum	K	$UTL_{95,95}$ (parametric)	Z	95% UCL (nonparametric)
Aluminum	90	24.86	25.25	1.02	53/90	41	16.50	*	4.200	95.00	---	---	1.944	95.0
Antimony	118	16.17	18.72	1.16	91/118	23	6.05	*	0.650	62.00	---	---	1.902	61.6
Arsenic	99	6.24	9.67	1.55	55/99	44	2.30	LN	0.375	53.00	1.929	27.6	---	---
Barium	111	67.66	31.96	0.47	111/111	0	65.00	LN	7.000	146.00	1.912	177.7	---	---
Beryllium	114	0.39	0.40	1.02	77/114	32	0.50	*	0.020	2.00	---	---	1.907	2.0
Cadmium	103	0.82	0.69	0.84	59/103	43	0.66	*	0.100	1.60	---	---	1.923	1.7
Chromium	118	1.20	0.87	0.73	68/118	42	1.65	*	0.200	3.10	---	---	1.902	2.9
Cobalt	115	1.63	1.27	0.78	82/115	29	2.00	*	0.250	7.10	---	---	1.906	7.1
Copper	97	16.25	28.28	1.74	62/97	36	5.60	LN	0.250	146.00	1.932	107.2	---	---
Iron	117	2,649.27	3,128.64	1.18	113/117	3	1,470.00	*	2.000	15,300.00	---	---	1.903	14,398.0
Lead	58	4.74	5.65	1.19	58/58	0	1.91	*	0.070	28.00	---	---	2.031	28.0
Manganese	108	625.21	556.91	0.89	108/108	0	473.50	LN	0.500	2,370.00	1.916	4,710.0	---	---
Mercury	111	0.10	0.16	1.72	59/111	47	0.047	*	0.015	0.90	---	---	1.912	0.9
Nickel	110	14.62	22.03	1.51	76/110	31	10.00	*	0.345	96.00	---	---	1.913	95.8
Selenium	69	4.10	7.34	1.79	31/69	55	1.35	*	0.350	40.00	---	---	1.993	40.0
Silver	115	0.77	1.05	1.36	63/115	45	0.50	*	0.250	7.80	---	---	1.906	7.2
Thallium	102	2.00	1.87	0.94	63/102	38	0.95	LN	0.320	9.60	1.924	7.5	---	---
Vanadium	113	1.44	1.55	1.08	78/113	31	1.50	*	0.250	11.00	---	---	1.909	10.7
Zinc	111	32.05	66.89	2.09	73/111	34	5.00	*	0.200	292.00	---	---	1.912	291.0

Note:
* Neither normal nor lognormal

Acronyms:
95% UCL – 95 percent upper confidence limit
CV – coefficient of variation
K – tolerance factor for estimating $UTL_{95,95}$
LN – lognormal
mg/kg – milligrams per kilogram
N – number of samples
µg/L – micrograms per liter
$UTL_{95,95}$ – upper tolerance limit of the 95th percentile with a confidence of 95 percent
Z – factor for calculating nonparametric UCL, from Table A3 in Gilbert (1987) or Table 5 in Appendix B in U.S. EPA (1989b)

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APPENDIX M

RELEVANT HISTORICAL DOCUMENT EXCERPTS

APPENDIX M
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INDUSTRIAL WASTE STUDY
NAVY COMPLEX—LONG BEACH, CALIFORNIA

A REPORT PREPARED FOR

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

DECEMBER, 1969

BROWN AND CALDWELL
CONSULTING ENGINEERS
ALHAMBRA, CALIFORNIA

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
1	54	02	Vehicle wash rack 1 wash rack	Various	Daily operation	Storm sewer	Detergent	
2	57	03	Air compressor (Pier #6) After cooler system cleaning	200	1 year	Harbor	Cee Bee J84A-caustic soda and sodium gluconate	
			Fresh water coolant system	200	4 months	Harbor	Nalco 39-corrosion inhibitor, nitrogen, boron, organic compounds	
			Sea water coolant	250 ± gpm	Continuous	Harbor	Nalco 201-chlorinated phenolic compounds, alkaline, for microorganism control	
3	57	38	Diesel engine part cleaning (outside of building) 3 carbon removal tanks - Total	3170	4-6 months	Hauled away by Shop 72	Carbon removal compound-Mil C-199538 Weps Type 2	Rinse area drains to harbor
4	100	POME	Photo lab Misc. photo chemicals	200 ± per year	Variable	Sanitary sewer	Hypo and developer solution for color and black and white photo work	
5	101	02	Vehicle wash rack 1 wash rack	Variable	Intermittent operation	Storm sewer	Detergent	
6	102	72	Pump & hose cleaning 1 detergent tank	150	2 weeks	Hauled away by Shop 72	Detergent-Mil D-16791E Type II	Floor drain connected to storm sewer
7	104	03	Steam plant Continuous blow	6.1 gpm	Continuous	Storm sewer	Feed water-chemicals added: phosphate, sodium sulfite, lignin and sludge dispersant	
			Bottom blow	150 per blowdown	4 hours	Storm sewer	Feed water-chemicals added: phosphate, sodium sulfite, lignin and sludge dispersant	
			Softener regeneration wastewaters	6,800 per regeneration	3 days	Storm sewer	Brackish waters	
8	104	03	Air compressor After cooler system cleaning	300	3 months	Storm sewer	Cee Bee J84A-caustic soda and sodium gluconate	
			Fresh water coolant system	1000	2 years	Storm sewer	Nalco 39-combination of boron, nitrogen and organic compounds	
			Salt water coolant	400 ± gpm	Continuous	Harbor	None	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
9	109	71	Paint removing					
			1 aluminum stripping tank	4400	6 months	Hauled away by Shop 72	Paint and varnish remover - steam heated	
			1 steel stripping tank	4400	6 months	Hauled away by Shop 72	Sodium hydroxide	
			1 rinse tank	4400	6 months	Sanitary sewer	None	
10	122	02	Vehicle motor parts cleaning					
			1 hot tank	630	3-4 months	Storm sewer	Kelite HD-7, alkaline solution, temp. 180-200°	
11	128	11	Aluminum cleaning					
			1 aluminum etching tank	1200	36 ± months	Hauled away by Shop 72	Kelite Alsite-alkaline aluminum etchant, temp. 160°	
			1 desmutter tank	600	36 ± months	Hauled away by Shop 72	Kelite Process 814, potassium bichromate solution	
			1 rinse tank	1200	Continuous	Storm sewer	None - temp. 155° F	
12	128	41	Boiler parts cleaning					Floor drain discharges to storm sewer
			1 diesel oil tank	3000	Liquid reused Sludge - 6 months	Shop 72 hauls away the sludge	Diesel oil and Kelite KE-Sonic-C, solvent-detergent concentrate	
			1 hot bath tank	3000	4 months	Liquid to storm sewer - Shop 72 hauls the sludge	Kelite Kenize, temp. 200°F, caustic solution	
13	129	51	Electroplating shop Chromating conversion of aluminum					
			1 cleaning tank	700	2 months	Sanitary sewer	Cee Bee A-51A, alkaline, detergent	
			1 satin etch tank	700	2 months	Sanitary sewer	Cee Bee Satin Etch-mixture of alkaline salts and sequestering agents	
			1 desmutter tank	700	6 months	Hauled away by Shop 72	Cee Bee A606-inorganic acids hexavalent chrome compounds, inorganic fluorides	
			1 cover coat tank	700	In use for 2 years with only adding chemicals	--	Cee Bee Konverkote No. 1 hexavalent chromium compounds	
			1 paint stripping tank	1875	Liquid: in use for 1 year with only adding chemicals Sludge: 6 months	-- Sludge is hauled away by Shop 72	Cee Bee C-226, moderately alkaline, chlorinated solvents, phenolic bodies, sodium chromate	
			2 rinse tanks-Total	1400	Continuous	Sanitary sewer	None	
			Cleaning prior to cadium and silver plating					
			1 caustic tank	1500	2 months	Sanitary sewer	Cee Bee 314-highly alkaline, caustic soda	
			1 hydrochloric acid pickle tank	250	1-1/2 months	Hauled away by Shop 72	Hydrochloric acid	
			1 bright dip tank	400	1-1/2 months	Hauled away by Shop 72	Sulfuric and nitric acids	
			1 chromic acid tank	150	In use for 1-1/2 years with only adding chemicals	--	MacDermid CU-20, chromate type compound, brite dip	
			1 rinse tank	500	Continuous	Sanitary sewer	None	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
13	129	51	Electroplating shop (cont)					
			Cadium plating					
			2 cadium plating tanks - Total	1000	In use 20 years filter solution and reuse - filter: 12 months	Sludge is washed down to sanitary sewer	Sodium hydroxide Sodium cyanide	
			1 Iridite tank	45	2 months	Sanitary sewer	Iridite 8P-chromate conversion coating, nitric acid	
			1 rinse tank	500	Continuous	Sanitary sewer	None	
			Silver plating					
			1 silver plating tank	370	In use 5 years filter solution and reuse - filter: 2 months	Sludge is washed down to sanitary sewer	Silver cyanide Potassium cyanide	
			1 rinse tank	500	Continuous	Sanitary sewer	None	
			Copper plating					
			1 cleaning tank	300	1 month	Sanitary sewer	Cee Bee PC-77, alkali mixture - temp. 180°F	
			1 copper plating tank	600	In use 10-15 years filter solution and reuse filter: 12 months	-- Sludge is washed down to sanitary sewer	Copper cyanide Potassium cyanide Potassium hydroxide	
			Nickle plating					
			1 nickle plating tank	600	In use 10-15 years filter solution and reuse filter: 12 months	-- Sludge is washed down to sanitary sewer	Single nickle salts Nickle chloride Boric acid, sulfuric acid - temp. 140°F	
			Hard chromium plating					
			3 hard chrome tanks - Total	2800	In use 3 years with only adding chemicals	--	Chromic acid Barium carbonate	
			1 rinse tank	250	Continuous	Sanitary sewer	None	
			Nickle strike					
			1 nickle strike tank	370	In use 6 years with only adding chemicals	--	Nickle chloride Hydrochloric acid	
			Sour water					
			1 sour water tank	600	3 months	Sanitary sewer	Kemtex #45-acid salt mix	
			Phosphate coating (process began in 10/69)					
			1 alkaline cleaner tank	800	1 month	Storm sewer and sanitary sewer	Coral AL-Clene No. 72 - temp. 160°F, non etch Al soak cleaner	
			1 zinc phosphate tank	600	Reuse solution and remove sludge 6-8 months	--	Coral Sur Coat 2000 - pH 2.5 to 2.7, zinc phosphate compound	
			1 manganese phosphate tank	600	Reuse solution and remove sludge 6-8 months	--	Coral Sur Coat 5000 - manganese phosphate compound	
			1 inhibitive seal tank	800	Only add chemical to tank	--	Coral IPR-chromic acid pH 2.8 ±	
			1 oil tank	400	Only add chemicals to tank	--	Lube oil	
			Degreaser					
			1 degreaser tank	110	3-4 months	Hauled away by Shop 72	Trichloroethylene	
14	129	71	Spray paint booth					
			1 wet wall baffle air cleaner tank	790	2-3 weeks	Sanitary sewer	Kelite KeFloc CH-coagulating aid, alkaline solution	

[a] See Fig. 3-1 for location of industrial waste sources

[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
15	129	71	Sand blast facility Air cleaning system	20 ± gpm	8 hours per day	Storm sewer	None	
16	130	17	Sheet metal cleaning 1 aluminum stripping tank	800	3 weeks	Hauled away by Shop 72	Kelite Alsite-alkaline aluminum etchant temp. 200°F	
			1 acid tank	800	Tank installed 9 months - contents have not been discharged	--	Kelite 814-aluminum desmutter acid, contains potassium bichromate	
			1 chromate acid tank	240	Tank installed 9 months - contents have not been discharged	--	Cee Bee, Konverkote No. 1 chromate acid, contains hexavalent chromium compounds	
			1 rinse tank	800	Daily	Sanitary sewer	None	
17	130	71	Spray paint booth 1 wet wall baffle air cleaner tank	960	1 month	Sanitary sewer	Kelite KE CH - coagulating aid, alkaline solution	
18	131	56	Pipe cleaning 1 caustic tank	1100	Sludge - 3 months liquid reused	Sludge hauled away by Naval Station	Cee Bee J84A-caustic soda and sodium gluconate	
			1 degreasing tank	500	Sludge - 24 months liquid reused	Sludge hauled away by Naval Station	Solvent dry cleaner 6850-285-8012	
			1 cut muriatic acid tank	900	4 months	Hauled away by Shop 72	Hydrochloric acid	
			1 sulfuric acid tank	1100	12 months	Storm sewer	Sulfuric acid	
			Detergent rinse	Variable	Daily	Storm sewer	Cee Bee A-69K, detergent	
			1 rinse tank	1100	Continuous	Storm sewer	None - at times heated	
19	131	56	Pipe paint stripping 1 aluminum stripping tank	400	6 months	In new area-contents have not been discharged	Cee Bee A215-moderately alkaline, chlorinated solvents, phenolic bodies, sodium chromate and wetting agents	
		—	1 acid tank	500	12 months	In new area-contents have not been discharged	Sulfuric acid Nitric acid	
			1 rinse tank	600	Continuous	Sanitary sewer	None	
20	132	71	Spray paint booth 1 wet wall baffle air cleaner tank	800	1 month	Sanitary sewer	Kelite KE-CH-coagulating aid, alkaline solution	
21	132	71	Aluminum cleaning 2 aluminum stripping tanks - Total	2200	1 month	Hauled away by Shop 72	Paint and varnish remover temp. 180-200° F	
			1 rinse tank	1100	3 months	Hauled away or storm water	None, temp. 180-200°F	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
22	132	31	Metal cleaning (outside of building)					
			1 caustic dip tank	750	2-3 months	Hauled away by Shop 72	Cee Bee C-47, caustic solution, sequestering and wetting agents	
			Rinse area	Variable	Daily operation	Storm sewer	Dye is cleaned with kerosene then rinsed with steam and water	
23	132	31	Test boiler cleaning					
			Cleaning	1500	12 to 18 months	Hauled away by Shop 72	Gamlin X-acid solution	
			Neutralizing	1500	12 to 18 months	Storm sewer	Sodium nitrite	
			Flushing	1500 +	12 to 18 months	Storm sewer	None	
24	141	Administrative	Reproduction 7 rooms with trays and small tanks, blue print machines	Up to 60	Various - per week to 2 months	Sanitary sewer	Developers, acetic acid, toner, hypo solutions, bleach, ammonia hydroxide potassium bichromate	
25	150	03	Steam plant					
			Continuous blow	5.5 gpm	Continuous	Storm sewer	Feed water-chemicals added: phosphate, sodium sulfite, lignin and sludge dispersant	
			Bottom blow	150 per blowdown	4 hours	Storm sewer	Feed water-chemicals added: phosphate, sodium sulfite, lignin and sludge dispersant	
			Softener regeneration wastewaters	9000 per regeneration	2-3 days	Storm sewer	Brackish waters	
26	150	03	Air compressor					
			After cooler system cleaning	700	4 months	Storm sewer	Cee Bee J84A-caustic soda and sodium gluconate	
			Fresh water coolant system	1000	2 ± years	Storm sewer	Nalco 39-combination of boron, nitrogen and organic chemicals	
			Sea water coolant	400 ± gpm	Continuous	Harbor	None	
27	151	03	Air compressor					
			After cooler system cleaning	180	4 months	Steam trench	Cee Bee J84A-caustic soda and sodium gluconate	
			Fresh water coolant system	200	2 ± years	Steam trench	Nalco 39-corrosion inhibitor, nitrogen, boron, organic chemicals	
			Sea water coolant	400 ± gpm	Continuous	Harbor	Nalco 201-chlorinated phenolic compounds, alkaline, for micro-organism control	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Shipyard								
28	196	03	Air compressor (Pier No. 2)					
			After cooler system cleaning	200	1 year	Storm sewer	Cee Bee J84A-caustic soda and sodium gluconate	
			Fresh water coolant system	200	4 months	Storm sewer	Nalco 39-corrosion inhibitor, nitrogen, boron, organic chemicals	
			Sea water coolant	250 ± gpm	Continuous	Wet well of salt water pumping station no. 2	Nalco 201-chlorinated phenolic compounds, alkaline, for micro-organisms control	
29	201	67	Cleaning slab Cleaning area	Variable	Intermittent operation	Storm sewer	Detergents	
30	Warehouse A	38	Paint stripping 3 metal stripping tanks - Total	385	18 months	Hauled away by Shop 72	Cee Bee A215-moderately alkaline, chlorinated solvents, phenolic bodies, sodium chromate and wetting agents	Rinse area drains to storm sewer
31	Stub Pier	03	Garbage container cleaning Cleaning slab	Variable	Daily operation	Harbor	Detergent	
Naval Supply Center								
32	50	--	Packing and preservation area					
			1 de-rusting tank	270	12 months	Storm sewer	Tec 360-acid type cleaner with solvents, phosphoric acid, wetting agent, chromate inhibitor	
			Tri-Co tank	50	6 months	Hauled away by Shop 72	Trichlorcethylene-vaporizer solvent	
Naval Station								
33	4	--	Steam plant					
			Continuous blow	10.4 gpm	Continuous	Storm sewer	Feed water-chemicals added: phosphate, sulfite, lignin and morlex	
			Bottom blow	200 per blowdown	8 hours	Storm sewer	Feed water-chemicals added: phosphate, sulfite, lignin and morlex	
			Softener regeneration wastewaters	12,000 per regeneration	3-4 days	Storm sewer	Brackish waters	
34	8	--	Paint bucket cleaning 1 cleaning tank	980	1 month	Storm sewer	Sodium hydroxide tech. type 6316-174-6581 temp. 150° F	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

Continued on next page

Location no.[a]	Building no.	Shop	Industrial process and source of waste	Quantity (gallons)[b]	Average discharge frequency	Reported method of disposal	Chemicals used in process tanks	Remarks
Naval Station								
35	46	--	Laundry and dry cleaning Softener regeneration wastewaters	400 per regeneration	3 days	Sanitary sewer	Brackish waters	
36	727	--	Steam plant Continuous blow	8.7 gpm	Continuous	Harbor	Feed water-chemicals added: lignin and morlex	
			Bottom blow	200 per blowdown	8 hours	Harbor	Feed water-chemicals added: lignin and morlex	
			Softener regeneration wastewaters	6000 per regeneration	4 days	Harbor	Brackish waters	
37	727	--	Air compressor Cooling tower - system blowdown	2000	12 months	Harbor	Nalco 321-amine type compound in alcohol co-solvent Nalco 82-a sodium polyphosphate, lignin sulphohate, organic combination Nalco 360-chromates, low pH	
			Cooling tower - continuous blowdown	0.3 ± gpm	Continuous	Harbor	Nalco 321-amine type compound in alcohol co-solvent Nalco 82-a sodium polyphosphate, lignin sulphohate, organic combination Nalco 360-chromates, low pH	

[a] See Fig. 3-1 for location of industrial waste sources
[b] Unless otherwise noted

DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

ENVIRONMENTAL ENGINEERING SURVEY

LONG BEACH NAVAL SHIPYARD

AUGUST 1977

CDM INC. ENVIRONMENTAL ENGINEERS
PASADENA · WALNUT CREEK, CALIFORNIA

LOCATION NO.(1)	BUILDING NO.	SHOP	SOURCE OF WASTE	QTY (GAL)	FREQUENCY OF DISCHARGE	DISPOSAL POINT	CONSTITUENTS OF WASTE
34	104	03	AIR COMPRESSOR (Four)				
			Salt Water Coolant	400 gpm	Continuous	Harbor	.2 - .5 ppm Chlorine
20	150	03	AIR COMPRESSOR (Four)				
			Inter & After Cooler Cleaning (Each)	700	3 Mo.	Sanitary Sewer	Nalco 39 Corrosion Inhibitor - Sodium Hydroxide
			Salt Water Coolant	400 gpm	Continuous	Harbor	.2 - .5 ppm Chlorine Residual
25	151	03	AIR COMPRESSOR (One)				
			Inter & After Cooler Cleaning	180	3 Mo.	Sanitary Sewer	Nalco 39 Corrosion Inhibitor & Sodium Hydroxide
			Salt Water Coolant	400 gpm	Continuous	Harbor	.2 - .5 ppm Chlorine Residual
33	196	03	AIR COMPRESSOR (One)				
			Inter & After Cooler Cleaning	200	3 Mo.	Sanitary Sewer	Nalco 39 Corrosion Inhibitor & Sodium Hydroxide
22	302	03	STEAM BOILER PLANT				
			Continuous Blowdown	20-30,000 gpd	Continuous	Sanitary Sewer	Sulfite, Chelate, Amines, Water
			Bottom Blow	400	Every 8 hours	Sanitary Sewer	Same
			Boiler Cleaning	9300	Yearly	Sanitary Sewer	Same
22	302	03	WATER SOFTENER (Two)				
			Backwash	20,000 ea.	Every 3 days	Sanitary Sewer	None
			Regeneration	900	Same	Same	Brine Solution
35	Stub Pier	03	GARBAGE CAN CLEANING	Varies	Intermittent	Sanitary Sewer	Detergent

(1) Locations shown on Figure 3-1

LOCATION NO.(1)	BUILDING NO.	SHOP	SOURCE OF WASTE	QTY (GAL)	FREQUENCY OF DISCHARGE	DISPOSAL POINT	CONSTITUENTS OF WASTE
			PRECISION ELECTRONICS & WEAPONS FACILITY				
11	210		Detergent Spray Booths (Four)	1-3 gpm	Varies	Sanitary Sewer	Detergent
12			Photo-engraving	10	Weekly	Sanitary Sewer	Various Photo Chemicals Including Some Ferric Chloride
11			Vapor Degreasers (Five)	410	Unknown (Only One in Operation at This Time)	Commercial Tank Truck	Unknown Solvent
8			Printed Circuit Board Facility Various Rinse	15000	Daily	Not in Operation at This Time	Acids, Caustic, Copper, Solder, Paint, etc.
			Various Process Tanks	Unknown	Unknown	Unknown	Processes Not Finalized At This Time
10			Steam Cleaning (Two locations)	Varies	Daily	Sanitary Sewer	Detergents
29			Plating Shop	70 gpm	Constant	Sanitary Sewer	Chromium, Nickel, Cyanide, Phenols, Copper, Acids, Caustics. See Text For More Details.
29			COOLING TOWER				
			Cleaning	1000	3 Mo.	Storm Sewer	Algicide & Corrosion
			Blowdown	10 gpm	Constant	Storm Sewer	Same
21	300		COOLING TOWER				
			Cleaning	600	3 Mo.	Sanitary Sewer	Algicide
			Blowdown	Varies	Constant	Sanitary Sewer	Same
36	57	03	AIR COMPRESSOR Inter & After Cooler Cleaning	200	3 Mo.	Sanitary Sewer	Sodium Hydroxide Nalco 39 Corrosion & Algae Inhibitor
			Salt Water Coolant	250 gpm	Continuous	Harbor	.2 - .5 ppm Chlorine Residual
34	104	03	AIR COMPRESSOR (Four) Inter & After Cooler Cleaning Each	300	3 Mo.	Sanitary Sewer	Nalco 39 Corrosion Inhibitor, Sodium Hydroxide

(1) Locations shown on Figure 3-1

LOCATION NO.(1)	BUILDING NO.	SHOP	SOURCE OF WASTE	QTY (GAL)	FREQUENCY OF DISCHARGE	DISPOSAL POINT	CONSTITUENTS OF WASTE
28	131	56	PIPE CLEANING				
			1 Muriatic Acid Tank	400	3 Mo.	Commercial Tank Truck	31.4 HCl by wt.
			1 Sulfuric Acid Tank	400	3 Mo.	Same	11.2% H_2SO_4 by wt.
			1 Rinse Tank	2000	Weekly	Sanitary Sewer	Acid Residue
			Steam Clean & Water Rinse	8 gpm	Varies	Sanitary Sewer	Caustic Residue
29		56	WAVEGUIDE CLEANING				
			1 Paint Strip Tank	400	Yearly	Commercial Tank Truck	Cee Bee A-215 pH 10.5 - 11.5
			1 Hot Rinse Tank	500	Continuous	Sanitary Sewer	Acid Residue
			1 Bright Dip Tank	500	1 1/2 Years	Commercial Tank Truck	Muriatic, Sulfuric, Nitric Acid
			1 Sulfuric Acid Tank	18	2 years	Commercial Tank Truck	Sulfuric Acid
25	132	31	CAUSTIC CLEANING				
			2 Caustic Tanks	500	Monthly	Commercial Tank	Cee Bee C-47 140° - 180°F Caustic
			Rinse Area	3-6 gpm	Intermittent	Sanitary Sewer	Caustic, Detergent Residue
26			Vapor Degreaser (Three)	5-10	Weekly	Waste Oil Container	Trichloroethane
26			Solvent Degreaser	50	6-8 Weeks	Waste Oil Container--Sludge Washed Down San Sewer	Commercial Dry Cleaning Solution
27		71	Spray Paint Booth	800	Monthly	Sanitary Sewer	Alkaline Solution Used As Coagulating Aid
24	136	06	Solvent Degreaser	35	3-4 Mo.	Waste Oil Container	Commercial Dry Cleaning Solvent
			Vapor Degreaser	0.5	Twice Daily	Same	Trichloroethane
11	210		PRECISION ELECTRONICS & WEAPONS FACILITY Solvent Degreasers (Six)	30-70	Varies 4-6 Mo.	Waste Oil Container	Commercial Dry Cleaning Solution

(1) Locations shown on Figure 3-1

LOCATION NO.(1)	BUILDING NO.	SHOP	SOURCE OF WASTE	QTY (GAL)	FREQUENCY OF DISCHARGE	DISPOSAL POINT	CONSTITUENTS OF WASTE
15		41	BOILER PARTS CLEANING 1 Preservative Removal Tank	1200	6-8 Mo.	Commercial Tank Truck	Diesel Oil & Detergent
			1 Caustic Tank	1200	6-8 Mo.	Commercial Tank	Caustic Cee Bee C-314 pH 13
			Rinse Process	8 gpm	Intermittent	Storm Drain	Diesel Oil, Caustic, Detergent
			1 Preservative Removal Tank	500	6-8 Mo.	Commercial Tank Truck	Diesel Oil & Detergent
38	129	134	CHEMICAL LAB	Varies	Daily	Sanitary Sewer	Various Reagents & Process Tank Samples
17		38	Solvent Degreasers (Two)	30	Monthly	Picked up by Shop 72	Commercial Dry Cleaning Solution
18			Marine Machine Shop Cleaning Area	30 gpm	Constant	Sanitary Sewer	Chromic Acid, Nitric Acid, Sulfuric Acid, Caustics, Phenols
30	130	17	SHEET METAL CLEANING 1 Chromate Tank	240	Not Emptied	N/A	Iridite 14-2 by Allite Kellite
			1 Acid Tank	800	Not Emptied	N/A	Aluminum Desmutter, Acid
			1 Aluminum Strip Tank	800	3 Mo.	Commercial Tank Truck	Aluminum Etchant Alkaline, 200°F
			1 Degreasing Tank	16	Not Emptied	N/A	Sludge Emptied to Waste Hopper
			1 Rinse Tank	800	Constant (1 gpm)	Sanitary Sewer	Residue from Dip Tanks
			1 Spray Rinse	5 gpm	Varies Daily	Sanitary Sewer	Residue from Dip Tanks
31		71	Spray Paint Booth Water Spray Curtain	960	Monthly	Sanitary Sewer	Alkaline Solution Used As Coagulating Aid
28	131	56	PIPE CLEANING 1 Caustic Tank	1300	2 Mo.	Commercial Tank Truck	18.1% NaOH by wt. Cee Bee C-84 A
			1 Degreasing Tank	500	6 Mo.	Same	Cee Bee A-69 M

(1) Locations shown on Figure 3-1

CHARACTERISTICS AND LOCATIONS OF INDUSTRIAL WASTES

LOCATION NO.(1)	BUILDING NO.	SHOP	SOURCE OF WASTE	QTY (GAL)	FREQUENCY OF DISCHARGE	DISPOSAL POINT	CONSTITUENTS OF WASTE
37	52		NON DESTRUCTIVE TESTING X-ray Processing	1/2	Mo.	Sanitary Sewer	Developer, Fix Solution Stop Bath
1	54	02	TRANSPORTATION Vehicle Wash Rack	8 gpm	Constant	Sanitary Sewer	Detergents (Some Dirt & Grease)
3			Steam Clean Area	8 gpm	Intermittent	Sanitary Sewer	Detergent, Grease, Oil, Dirt, Hydraulic Fluid, etc.
3			Motor Parts Cleaning--(Dip Tank)	450	2 Mo.	Sanitary Sewer	Highly Caustic Cleaning Solution Cee Bee C-47 Temp. 212 degrees F
2			Large Vehicle Wash Rack (Steam Clean)	8 gpm	Intermittent	Storm Drain	Detergent, Oil, Grease, etc.
5			Solvent Clean Tanks (Three)	25 ea.	2 Mo.	Waste Oil Tank	Commercial Dry Cleaning Solvent (AMCO SD-2 Type 2) --Sludge Washed to San Sewer
4			Paint Bucket Cleaning	600	Unknown	Storm Drain	Unknown
6	100	40	PHOTO LAB	Varies	Intermittent	Sanitary Sewer	Developer, Shortstop E-4 Color Developer, C-22 Color Negative Developer
32	109	71	PAINT STRIPPING 1 Aluminum Strip Tank	4400	6 Mo.	Commercial Tank Truck	Paint & Varnish Remover
			1 Steel Strip Tank	4400	6 Mo.	Commercial Tank Truck	Sodium Hydroxide
			1 Rinse Tank	4400	Infrequent	Sanitary Sewer	Residue from Process Tanks
16	128	11	Aluminum Cleaning 1 Acid Tank	900	2 Years 2 Years	Commercial Tank Truck	Allied "Kellite" (Acid)
			1 Caustic Tank	900	2-3 Years	Commercial Tank	Caustic--"Isoprep 33" by Allied Chemical 212 degrees F
			1 Rinse Tank	1200	Continuous 2 GPM	Sanitary Sewer	Acid & Caustic Residue

(1) Locations shown on Figure 3-1

KAE KORCZYNSKI
Code 383.1

DEPARTMENT OF THE NAVY
LONG BEACH NAVAL SHIPYARD

TOXIC AND HAZARDOUS WASTE PROCEDURES SURVEY

LONG BEACH, CALIFORNIA

JULY 1980

APPENDIX C

SURVEY RESULTS: HAZARDOUS WASTE INVENTORY

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN SERVICE CONTRACT (CODE 423)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Cooling tower (B.210)									
• Cleaning	Hexavalent chromium[a]	T	8400 gal	Roof of B.210	Tower	2100 gal	3 month	Storm sewer	Present violation Future treatment at P-202
• Blowdown	Hexavalent chromium[a]	T	7 gpm[a]	Roof of B.210	Not applicable	Not applicable	Not applicable	Storm sewer	
• Overflow	Hexavalent chromium[a]	T	Weekly	Roof of B.210	Not applicable	Not applicable	Not applicable	Storm sewer	
Cooling tower (B.210)									
• Cleaning	Hexavalent chromium[a]	T	4000 gal	Roof of B.210	Tower	1000 gal	3 month	Storm sewer	Present violation Future treatment at P-202
• Blowdown	Hexavalent chromium[a]	T	4 gpm[a]	Roof of B.210	Not applicable	Not applicable	Not applicable	Storm sewer	
• Overflow	Hexavalent chromium[a]	T	Weekly	Roof of B.210	Not applicable	Not applicable	Not applicable	Storm sewer	
Cooling towers (2) (B.300)									
• Cleaning	Hexavalent chromium[a]	T	9600 gal	NW of B.300	Towers	2400 gal	3 month	Sanitary sewer	

[1] Hazards
T - Toxic
C = Corrosive
I = Irritant
F = Flammable

[a] From 1977 CDM Report; unable to verify.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN SERVICE CONTRACT (CODE 423)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
• Blowdown	Hexavalent chromium[a]	T	14 gpm[a]	NW of B.300	Not applicable	Not applicable	Not applicable	Sanitary sewer	
• Overflow	Hexavalent chromium[a]	T	Intermittent	NW of B.300	Not applicable	Not applicable	Not applicable	Sanitary sewer	

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F = Flammable

[a] From 1977 CDM Report; unable to verify.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN TRANSPORTATION (02)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Vehicle wash rack (B.54)	Detergents (Cee Bee A-13) and trace oil	T	100 gallons of detergent diluted	West of B.54	None	Not applicable	Not applicable	Storm sewer	Present violation Future treatment at P-202
Crane and large vehicle wash (B.54)	Detergents (Cee Bee 100) and trace oil	T	Varies	West of B.54 North of B.43	None	Not applicable	Not applicable	Storm sewer	Present violation Future treatment at P-202
Solvent clean tanks (4) (B.54)	Solvent	I,F	100-150 gal	3 inside B.54 1 outside B.54	Solvent tanks	25 gal	2-3 months	Collection in waste oil trailer prior to disposal in waste oil barge	
Painting (B.43)	Paints and solvents	T,F	Minor	B.43	Refuse dumpster	Varies	1 day	Western Refuse	Minor operation; intermittently in service
Tire (B.71), Inspectors (B.121), and Sheetmetal (B.122)	Paints, petroleum products, and solvents	T,F	Minor	B.73 B.121 B.122	Refuse dumpster	Varies	1 day	Western Refuse	
Vehicle maintenance (B.54)	Waste oil and trace solvent	T,F	1500-300 gal	West of B.54	500 gal	500 gal	2-4 months	Collection in waste oil trailer prior to disposal in waste oil barge	Sold by DPDO

[1] Hazards
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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN TRANSPORTATION (02)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Vehicle maintenance	Caustic cleaning and tank-motor parts cleaning (Ceo Bee 47)	C,I	900-2700 gal	East of B.122	Tank trailer dip tank	500 gal	2-6 months	Contractor hauler	
	Steam clean (oils, caustic and dragout)	T	Varies	East of B.122	None	Not applicable	Not applicable	Sanitary sewer	
	Automotive batteries	T,C	800 units	Near water tower	Open on wooden pallets	160 units	varies	Acid drained by shop 07	Sold by DPDO

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN UTILITIES (01)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Air compressor cooler cleaning (4 compressors B.104 and 150) 1 compressor at B.149)	Cee Bee 83A	C	540 gal	B.140, 150, 149	None	Not applicable	None	B.104, B.150-Storm sewer B.149-Sanitary sewer	Present violation
	Alkad (cadmium plated) batteries	T,C,I	23 Units	B.150	Open on wooden pallets	unknown	unknown	Sent to shop 02; acid drained by shop 07	Sold by DPDO
Steam boiler (4 boilers at B.4 and 3 boilers at B.302)	Nalco 356 (corrosion inhibitor)	T,C,I	Total flows: 40,000-60,000 gpd continuous blowdown; 800,000 gal. bottom blowdown; 19,000 gal boiler cleaning[a]	B.4 and 302	Not applicable	Not applicable	Not applicable	Sanitary sewer, cleaned and disposed by contract	
	Nalco 7220 (scale and sludge control	C							
	Nalco 357 (Filmer for condensate)	T							
	Nalco 762 (Chelate)	C							

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F = Flammable

[a] From 1977 CDM report; unable to verify.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN UTILITIES (03)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Water softening (2 ion exchange units at B.4 and 302)	Nalco 464 (acid rinse)	C,I	300-400 gal each	B.4 and 302	Not applicable	Not applicable	Not applicable	Sanitary sewer	Each plant backwash 160 days per year

[1] Hazards
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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP PUBLIC WORKS DEPARTMENT
SHOP ORIGIN MAINTENANCE (07)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Carpenter (B.5) Machine (B.5) Plumbing (B.5)	Minor quantities of plants, lubricants, and solvents	T,F	Minor	B.5	Refuse dumpsters	Minor	1 day	Western Refuse	
Paint (B.8)	Paint mixed with thinner and oil	T,I,F	400-600 gal	B.8	55 gal DR on pallets on asphalt	100 gal	2-3 months	Contractor hauler	
Pest control (B.7)	Pesticide drums	T	Varies	B.7	None	Not applicable	Not applicable	Triple rinsed with water disposed as non-hazardous waste	Possible violation. Water could be captured and used for dilution water in making new solutions.
	Pesticide bags	T	Varies	B.7	None	Not applicable	Not applicable	Disposed without treatment by Western Refuse	Present violation

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP STRUCTURAL
SHOP ORIGIN SHIPFITTERS (11)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Shipfitting (B.128)	NaOH aluminum etchant (Isoprep 33)	T,C	1220-1830 gal	B.128	Dip tank	1220 gal	12-18 months	Contractor hauler	
	Acid wash contains fluorides and chromates (allied kel-lite 814)	C,I	1220-1830 gal	B.128	Dip tank	1220 gal	12-18 months	Contractor hauler	
	Rinse water(2)	T,I	2 gpm each[a]	B.128	Rinse tank	1220 gal each	Continuous flow	Storm sewer	Present violation Future treatment at P-202

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[a] From 1977 CDM report; unable to verify.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP STRUCTURAL
SHOP ORIGIN SHEETMETAL (17)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Sheetmetal (B.130)	Caustic dip (NaOH)	T,C	800 gal	B.130	Dip tank	800 gal	1 year	Contractor Hauler	
	Desmutter (60 percent H_2SO_4)	T,C,I	Not applicable	B.130	Dip tank	800 gal	Not applicable	Not disposed	
	Konverkote (HNO_3 and chromic acid)	T,C,F	Not applicable	B.130	Dip tank	200 gal	Not applicable	Not disposed	
	Rinse water	C,I	1 gpm[a]	B.130	Rinse tank	800 gal	Continuous	Sanitary sewer	
	Blast-off (degreaser and thinner)	T,I,F	Unknown	B.130	Dip tank	200 gal	Unknown	Unknown	Blast-off was first used in mid-November 1979

[1] Hazards
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[a] From 1977 CDM report; unable to verify.

HAZARDOUS WASTE SURVEY

PRODUCTION GROUP STRUCTURAL
SHOP ORIGIN BOILERMAKER (41)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site: Location of site	Storage site: Kind of storage	Storage site: Quantity stored (express units)	Storage site: Average storage time	Current treatment, disposal, reclamation	Comments
Boiler, forging, and foundry	Cosmoline (caustic soda tank) B.128	C,I	12,000-18,000 gal	B.128	Dip tank	6,000 gal	4-6 months	Contractor hauler	
• Boiler tubes	Trichloroethane filter and oil sludge	F	2-3 filters	B.128	Dumpster	One	4-6 months	Western Refuse	
	Rinse water	T	8 gpm[a]	B.128	Rinse tank	800 gal	Continuous	Storm sewer	Present violation
• Heat treater	Quench oil	F	Not applicable	B.128	Quench tank	3 at 500 gal 1 at 1000 gal	Changed every 8-10 years	Hauled away by shop 72 to waste oil barge	
	Trichloro-ethane and oil sludge	F	90 gal	B.128	Degreaser tank	30 gal	3 months	Hauled away by shop 72 to waste oil barge	
	Neutral salt bath (contains barium chloride)	T	2 pots	B.128	In heat treater area; indoors on concrete	Varies	6 month	Disposal with salt pot by Western Refuse	
• Foundry	Waste oil	F	500-700 gal	SW Corner of B.132	55 gal DR on pallets over asphalt	500-700 gal	1 year	Hauled away by shop 72	

[1] Hazards:
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I = Irritant
F = Flammable

[a] From 1977 CDM report; unable to verify.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN HEAVY TOOLS (31) AND PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Steam cleaning B.129	Soap water containing trace oil	T	Unknown	SE corner of B.129	None	Not applicable	Not applicable	Storm sewer	Present violation
Valves (B.132)	Trichloro-ethane and waste oil	F	440-660 gal	B.132, FL. 2	Dip tank	660 gal	12-18 months	Contractor hauler	
	Caustic cleaner (NaOH)	T,C	1980-1320 gal	B.132, FL. 2	Dip tank	660 gal	4-5 months	Contractor hauler	
	Muriatic acid	T,C	1980 gal	B.132, FL. 2	Dip tank	660 gal	3 months	Contractor hauler	
	Chromic acid	T,C,F	1980 gal	B.132, FL. 2	Dip tank	660 gal	3 months	Contractor hauler	
	Microbrite dip	C,I	Not applicable	B.132, FL. 2	Dip tank	660 gal	Not applicable	Not disposed	
	Alkali cleaner	C,I	Not applicable	B.132, FL. 2	Dip tank	660 gal	Not applicable	Not disposed	
	4 rinse tanks	T	23,760 gal	B.132, FL.2	Rinse tank	660 gal each	1 month	Sanitary sewer	Future Treatment at P-202
	Paint stripper (acid)	C,I	Unknown	B.132, FL.2	Dip tank	1200 gal	Unknown	Contractor hauler	

[1] Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN HEAVY TOOLS (31)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Pump repair; Grinding and precision testing (B.132)	Waste oil	F	300 gal	SW corner B.132	Steel oil tank	2,000 gal	1 month	Hauled away by shop 72	Sold by DPDO
	Rust lick filter (solvent)	F,I	Unknown	North of B.132	Dumpster	Unknown	1 day	Western refuse	Solvent liquid is reused by filtration
Boiler testing B.132	Acid (unknown)	C,I	240 gal	SE corner of B.132	Tank	Not applicable	1 day	Hauled away by shop 72	
	Neutralizer	C,I	120 gal	SE corner of B.132	Tank	Not applicable	1 day	Hauled away by shop 72	

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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN MACHINIST (38)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Governor, ACC and diesel work (B.129)	Waste oil and solvent	F	2500 gal	NE of B.129	Outside 55 gal DR on pallets on asphalt	6-8 DR.	Varies	Taken to pier 6	Sold by DPDO
Hydraulics	Waste oil and solvent	F	1750 gal	NE of B.129	Outside 55 gal DR on pallets on asphalt	6-8 DR.	Varies	Taken to pier 6	Sold by DPDO
Compressor	Waste oil and solvent	F	1200 gal	NE of B.129	Outside 55 gal DR on pallets on asphalt	6-8 DR.	Varies	Taken to pier 6	Sold by DPDO
	Sludge	F	Varies	NE of B.129	Dumpster	Varies	1 day	Western refuse	
Solvent degreasers	Solvent	I,F	360 gal	B.129	Degreaser tank	30 gal	Month	Drain into 55 gal drums and taken to pier 6	

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN PIPEFITTERS (56)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Gasket making B.131	Asbestos	T	50-38 inch by 65 inch bags	B.90	Double bag in special dumpster	1-38 inch by 65 inch bag	Weekly	Western Refuse	
Pipefitting	Caustic (14 percent NaOH)	T,C	2000 gal	B.131	Dip tank	1000 gal	6 months	Contractor hauler	
	Muriatic acid (14 percent HCl)	T,C	1500-1700 gal	B.131	Dip tank	1000 gal	7-8 months	Contractor hauler	
	Rinse water	T	Unknown	B.131	Rinse tank	1200 gal	Continuous	Sanitary sewer	
Wave guide	Brite dip 68 percent H_2O 14 percent H_3PO_4 7 percent HNO_3 7 percent TURCO 4104	C,I	69 gal	B.131	Dip tank	69 gal	One year	Contractor hauler	
	Rinse water	T	Unknown	NE corner of B.131	Open with roof	300 gal	Continuous disposal	Sanitary sewer	

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN PIPEFITTERS (56)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Wave guide (continued)	Bright dip 2 percent HNO_3 59 percent H_2O 39 percent H_2SO_4	C,I	562-281 gal	NE corner of B.131	Open with roof	281 gal	6-12 months	Contractor hauler	
	Trichloro-ethane and trace oil	F	6000 gal	NE corner of B.131	Open with roof	Not applicable	Not applicable	About 50 percent estimated to drain into sanitary sewer and about 50 percent is stored in drums taken to pier 6	Present violation
	Burnt Resin	T	100 gal	NE corner of B.131	55 gal DR on asphalt	55 gal	6 months	Taken to pier 6 Contractor hauler disposal	
Refrigeration	Dry cleaning solvent and lube oil mixture (50 percent each)	F,I	300-250 gal	Inside shop, E. of B.131	20 gal DR on concrete	20 gal	3-4 weeks	Taken to pier 6 Stored in oily barge	Separation recommended prior to disposal

[1] Hazards
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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN PIPEFITTERS (56)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Steam cleaning	Detergent (Cee Bee C-100) and trace oil	T	Unknown	B.131	Not applicable	Not applicable	Varies	Sanitary sewer	
Degreaser	Cee Bee A-69	F,I	1000 gal	B.131	Degreaser tank	500 gal	6 month	Contractor hauler	

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN INSULATION (57)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Insulation (B.132)	Fiberglass	T	7-38 inches by 65 inches bags	West of B.132	Double bag	14-38 inch by 65 inch bags	Every 2 years	Western Refuse	

[1] Hazards
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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN UNDER PLATING SHOP SUPERVISION

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
FUTURE SOURCE B.205								Future treatment at P-202	Under construction
Paint stripper	Turco 5351	F,I	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Rinse	Phenols	T	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Aluminum etchant	NaOH	T,C	Unknown	B.205	Dip tank	2500 gal	Unknwon	Not applicable	
Rinse water	Alkaline	T,C	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Desmutter	Smut-Go	T,C,I	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Rinse (2)	Chromates	T	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Chromate conversion Coat	Turco 4354 Chromates	T	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	
Rust Remover	Alkaline	C,I	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	

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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP MECHANICAL
SHOP ORIGIN UNDER PLATING SHOP SUPERVISION

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Rust inhibitor	Sodium nitrate		Unknown	B.205	Dip tank	3750 gal	Unknown	Not applicable	
Rinse water	Phenols	T	Unknown	B.205	Dip tank	3750 gal	Unknown	Not applicable	
Decarbonizer	Phenols	C	Unknown	B.205	Dip tank	2500 gal	Unknown	Not applicable	

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN WEAPONS SYSTEM (36)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Steam cleaning (1st Fl., B.210)	Detergent (Naphtha aromatic), trace oils	T	Unknown (intermittent)	East of B.210 (outdoors)	None	Not applicable	Not applicable	Sanitary sewer	
Solvent degreasers (3 degreaser tanks on 1st Fl, B.210)	Solvents	F,I	90-130 gal	B.210 Fl. 1	Degreaser	15 gal	4-6 months	Contractor hauler	
Weapons system (1st Fl. B.210)	Hydraulic fluid	T	7200-14,400 gal	Pier 6	55 gal DR on pallets over concrete	Varies	Varies	Hauled to pier 6	Sold by DPDO
	Cellulube	T,I,C	200 gal	B.210 storage compound	55 gal DR on pallets over asphalt	4 drums	6 weeks	After chemically broken down, disposal by contractor hauler	
	Solvents	I,F	1200 gal	Pier 6	55 gal DR on pallets over concrete	varies	Varies	Hauled to Pier 6; disposal into industrial waste barge	Separate disposal recommended
	Antifreeze (ethylene glycol)	T	100 gal	Pier 6	Steel drums on pallets over concrete	Varies	Varies	Hauled to Pier 6, disposal into industrial waste barge	Separate disposal recommended

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN WEAPONS SYSTEM (36)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Optical section (5th Floor) B.210	Cleaning solvent and freon degreaser	I,F	5 gal	B.210 Storage compound	5 gal containers on pallets over asphalt	Varies	Varies	Contractor hauler	
	Brite dip	C,I	10 gal	B.210 Storage compound	5 gal containers on pallets over asphalt	Varies	Varies	Contractor hauler	
	Lubo oil	F	Minor	B.210 Dumpster	5 gal containers	Minor	1 day	Western Refus	
	Kerosene	F	Minor	B.210 Dumpster	5 gal containers	Minor	1 day	Sanitary sewer	Present violation
	Nitric acid	T,C,F	Minor	B.210, FL.5	Not applicable	Not applicable	Not applicable	Sanitary sewer	Present violation
	Hydrochloric acid	T,C	Minor	B.210, FL.5	Not applicable	Not applicable	Not applicable	Sanitary sewer	Present violation
	Potassium hydroxide	T,C	Minor	B.210, FL.5	Not applicable	Not applicable	Not applicable	Sanitary sewer	Present violation

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRICAL
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T1 Cadmium plate	Sodium hydroxide, cyanide	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T2 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T3 Acid cleaner	Hydrochloric acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T4 Alkaline cleaner	Sodium hydroxide (Cee Bee 213)	C,I	16,200-21,600 gal	B.210, FL.1	Tank	5400 gal	3-4 months	Contract hauler	
T5 Acid stripper	Sulfuric acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T6 Acid stripper	Hydrochloric acid	T,C	7800 gal	B.210, FL.1	Tank	1300 gal	2 months	Contract hauler	
T7 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T8 Alkaline cleaner	Sodium hydroxide (Turco N.T.C.)	C,I	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	

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I = Irritant
F = Flammable

[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDM report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T9 Phosphate coat	Maganese phosphate, acidic	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not Disposed	
T10 Rinse	Hevy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T11 Cadmium plate	Sodium hydroxide, cyanide	T	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T12 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T13 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T14 Bright dip	Nitric-chromic acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T15 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T16 Bright dip	Chromic acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T17 Rinse	Heavy metals	T		B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T18 Inhib-seal-coat	Chromic acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	

[1] Hazards
T = Toxic
C = Corrosive
I = Irritant
F = Flammable

[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDM report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T19 Nonetch rinse	Chromic acid	T,C	7800 gal	B.210, FL. 1	Tank	1300 gal	2 months	Contract hauler	Future treatment at P-202
T20 Nickel strike	Hydrochloric acid, nickel chloride	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T21 Silver plate	Cyanide	T	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T22 Silver strike	Cyanide	T	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T23 Alkaline cleaner	Sodium hydroxide (Cee Bee PC-77)	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T24 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T25 Alkaline cleaner	Sodium hydroxide (Micel Soak 107)	T,C	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T26 Alkaline cleaner	Sodium hydroxide (Cee Bee Satin etch)	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	Future treatment at P-202

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[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDH report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T27 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1400 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T28 Smut remover	Chromic acid (Cee Bee A-606	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	1-4 months	Contract hauler	
T29 Copper plate	Potassium hydroxide, Cyanide	T,C	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T30 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	700 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T31 Sour water	Hydrochloric acid	T,C	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T32 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	700 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T33 Nickel plate	Nickel chloride, nickel sulfate	T	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T34 Rinse	Nickel chloride, nickel sulfate	T	Unknown[a]	B.210, FL.1	Not applicable	700 gal	Not applicable	Sanitary sewer	Future treatment at P-202

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[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDM report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T35 Chromate conversion coat	Chromic acid (konvertkote 1)	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	
T36 Bright dip	Chromic acid	T,C	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T37 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1400 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T38 Bright dip	Heavy metals, chromic acid	T,C	None	B.210, FL.1	Tank	700 gal	Not applicable	Not disposed	
T39 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T40 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T41 Hard chrome plate	Chromic acid	T,C	None	B.210, FL.1	Tank	2500 gal	Not applicable	Not disposed	
T42 Hard chrome plate	Chromic acid	T,C	None	B.210, FL.1	Tank	3650 gal	Not applicable	Not disposed	
T43 Hard chrome plate	Chromic acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	
T44 Decorative chrome plate	Chromic acid	T,C	None	B.210, FL.1	Tank	1300 gal	Not applicable	Not disposed	

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[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDH report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
T45 Chromate conversion coat	Chromic acid (Turco 4345)	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	
T46 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	700 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T47 Smut remover	Nitric acid	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	
T48 Alkaline cleaner	Sodium hydroxide (Cee Bee A54)	T,C	2100-2800 gal	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	
T49 Rinse	Heavy metals	T	Unknown[a]	B.210, FL.1	Not applicable	700 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T50 Aluminum etch	Sodium hydroxide (aluminum etch 1)	T,C	Unknown[a]	B.210, FL.1	Tank	700 gal	3-4 months	Contract hauler	
T51 Rinse	Heavy metals, phenols	T	Unknown[a]	B.210, FL.1	Not applicable	1300 gal	Not applicable	Sanitary sewer	Future treatment at P-202
T52 Paint stripper	Sodium hydroxide, phenols	T,C	4200-5600 gal	B.210, FL.1	Tank	1400 gal	3-4 months	Contract hauler	
T53 Rhodium plate	Sulfuric acid	T,C	None	B.210, FL.1	Tank	30 gal	Not applicable	Not disposed	

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[a] Individual flow rate from the rinse tanks could not be obtained. However, the 1977 CDM report reports an average total rinse water flow of 75 gpm.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PLATING (51)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Gyro Shop (5th Fl., B.210)	Dry cleaning solvent, oil, freon	F,I	200-250 gal	B.210 storage compound	55-gal DR	50 gal	2.5-3 months	Taken to pier 6	Prior to removal by contractor hauler
	Batteries	I,C	10 units/ 5 yr	B.210 storage compound	Concrete floor	10	Unknown	Taken to shop 02	Sold by DPDO
Instruments (5th Fl., B.210)	Technical cleaner	T	Minor quantity	Not applicable	Not applicable	Not applicable	Not applicable	Sanitary sewer	

[1]Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP ELECTRICAL/ELECTRONICS
SHOP ORIGIN PRINTED CIRCUIT BOARD (66)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Printed circuit board (5th Fl., B.210)	Trichloro-ethane		20-45 gal	Not applicable	Not applicable	5 gal	4-8 months	Sanitary sewer	Present violation
	Copper alkaline etching AE 25	C,I	40-60 gal	B.210 storage compound	Cans on asphalt	30 gal	6-8 months	Contractor hauler	Present violation
	Solder brightener	C,I	30-40 gal	B.210 storage compound	Cans on asphalt	20 gal	6-8 months	Contractor hauler	Present violation
	AP 220 degreaser	I,F	45 gal	Not applicable	Not applicable	15 gal	4 months	Sanitary sewer	Present violation
	AP 232 (stripper of photopolymer film)	T,I,F	45 gal	Not applicable	Not applicable	15 gal	4 months	Sanitary sewer	Present violation

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HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN PLASTIC (64)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Plastic molding (B.303)	Acetone contaminated by epoxy or polyester foam	T,F	100 gal	SW end of B.303	55-gal DR on asphalt	55 gal	6 months	Shop 07 removes waste for disposal by contract hauler	
Plastic coating spray trap (water curtain) (B.303)	Contaminated water	T	Unknown	South end of B.303	None	Unknown	3-4 months	Storm sewer	Possible violation
	Sludge from water curtain	T	Unknown	South end of B.303	Dumpster	Unknown (varies)	3-4 months	Shop 72 collects sludge and disposes as refuse by Western Refuse	

[1] Hazards
T = Toxic
C = Corrosive
I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN PAINTING/BLASTING (71)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Dry dock painting (waterfront)	Variety of paints, solvents, thinners, coatings	T,F,I	2,000 gal	During painting operations--on dry dock concrete floor After painting operations--on concrete area adjacent to dry dock	55-gal drum on pallets	100/gal ship	Varies	Partially-full cans are allowed to harden, then disposed as refuse; drums are hauled away by public works	
Tops and decks painting (waterfront)	Variety of paints, solvents, thinners, coatings	T,F,I	1,000 gal	During painting operations--on dry dock concrete floor After painting operations--on concrete area adjacent to dry dock	55-gal drum on pallets	50 gal/ ship	Varies	Partially-full cans are allowed to harden, then disposed as refuse; drums are hauled away by public works	
Shop 71--shop painting Mechanical group (B.129)	Paint and solvents	T,F	50-100 gal	B.129	55-gal DR	55 gal DR	Year	Contractor hauler	
	Used paint filters	T,F	4-6 filter units		Refuse dumpster		One day	Western Refuse	

[1] Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN PAINTING/BLASTING (71)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Paint shop (B.202--3 booths)	Paint spray booth, water and sludge (downdraft) - alkaline solution	T,F	99,000 gal/ 4-5 yr	B.202	Open sumps beneath grated floor	33,000 gal per sump	4-5 yr	Contractor hauler	Have never been disposed
Paint shop (B.216)	Blasting abrasives, fines, paint and rust	T	450-500 gal	East of B.216	55-gal DR on soil	55 gal DR	5-6 wk	Western Refuse	
	Paint sludge	T,F	100-175 gal	SW outside of B.216	55-gal DR on pallets over asphalt	6-7 gal	2-3 wk cleaned	Western Refuse	
Structural group (B.130)	Water curtain spray paint booth - alkaline solution	T	12,000 gal	Interior of B.130; west-side	Underground sump	1,000 gal	1 month	Sanitary sewer	Water is recycled until contami-nated beyond use
Mechanical shop painting (B.132)	Paint sludge collected from water curtain	T,F	100-200 gal	B.132 (2nd FL.)	55-gal DR on pallets	25-50 gal	3 months	Hauled to B.202 paint storage area	Water curtain uses 1,000 gal disposed in sanitary sewer

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F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN PAINTING/BLASTING (71)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Electrical/ electronics paint shops (B.210) (3 booths)	Contaminated filters	T,F	Varies	B.210 (1st FL.) 1-booth	Skip box	60 filters	Varies	Western Refuse	
	Contaminated filters	T,F	Varies	B.210 (5th FL.) 1-booth	Dumpster	16 filters	Varies	Western Refuse	
	Contaminated filters	T,F	Varies	B.210 (5th FL.) 1-booth	Dumpster	30 filters	Varies	Western Refuse	
Varnishing and paint shop (B.303)	Contaminated water curtain water - alkaline solution	T	3,000 gal	B.303 (2nd FL.)	55-gal DR on pallets over asphalt	1,000 gal	3 months	Contractor hauler	
Paint shop (B.303)	Contaminated water curtain water - alkaline solution	T	1,120 gal	East of B.303 outside	Water curtain tank	560 gal	6-7 months	Contractor hauler	
Sand blasting (dry docks 1,2, B.202, 216, 128, 210, 132)	Copper slag ("Apache sand")	T,I	5,676 tons[a]	Scattered throughout ship yard	Hoppers or skip boxes	12,744 tons[a]	One day	Western Refuse	
	Aluminum oxide	T,I	65,000 lb[a]						
	Steel grit	T,I	8,000 lb[a]						
	Glass beads	T,I	3,350 lb[a]						

[1] Hazards
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[a] Estimated from Western Refuse hauler's records for past 12 months. (Assumes all sand is from LBNSY sandblasting operations.)

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN EQUIPMENT CLEANERS (72)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Equipment cleaners (shipboard activity)	T-37 tri-sodium, phosphate, sodium silicate, detergent	T	19,200 lb	Pier-E	Tank	Varies	1 month	Contractor hauler	
	Citric acid	C,I	9,600 lb	Pier E	Tank	Varies	Varies	Contractor hauler	

[1] Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SERVICE
SHOP ORIGIN SHIP SUPPORT (29)

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Shop 99-Chlorination to disinfect ship hoses (B.303)	100 ppm chlorine	T	Unknown	East of B.303	Not applicable	Not applicable	Not applicable	Storm drain	Possible violation

[1] Hazards
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP QUALITY ASSURANCE LABORATORY
SHOP ORIGIN CODE 134

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
(C.133) X-ray processing (B.52)	Developer, fixer solution stop bath	T	120-200 gal	B.52	Wash bin	20-25-gal	1.5-2 months	Filter out silver prior to disposal into sanitary sewer	
(C.134) Chemical lab (B.129)	Various reagents, chemicals, process tank samples	C,T,I,F	Varies	B.129 (2nd FL.)	None	None	Not applicable	After neutralization and dilution, disposal into sanitary sewer	
	Waste oil sample	T,F	Varies minor quantity	B.129	Waste oil holding tank	Unknown	Unknown; has never been emptied	Disposal into a pipe which flows into storage tank that has never been emptied	

[1] Hazards
T = Toxic
C = Corrosive
I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP Supply
SHOP ORIGIN

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Photographic developing lab (B.100)	Developer, shortstop, fixing solution, stabilizer, bleach, hypo	T,F	Varies 300 gal	B.100 (2nd FL.)	Process pans	Not applicable	Varies	Hypo solution is sent to San Diego for silver recovery; All other solutions are disposed into sanitary sewer	
Insulation warehouse (B.98)	Asbestos removal	T	Unknown	B.98	40-ft long dumpster (open)	Unknown	Unknown	Double bags of asbestos are sealed and stored in two dumpsters prior to removal by Western Refuse	
Shop planners perventive maintenance	Waste oil	F	2,000 gal	B.130 (20 percent) B.131 (5 percent) B.132 (75 percent)	2,000 gal tank (B.132)	2,000 gal	1 month	Waste oil from annual preventive maintenance operations are stored in 2,000 gal steel tank SW of B.132 before removed by shop 72	Sold by DPPO

[1] Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SUPPLY
SHOP ORIGIN _____

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Shop planners preventive maintenance	Waste oil	F	600 gal	B-5, 7, 51, 122, 128, 129, 133, 210, 303	2,000-gal tank	Varies	Varies	Stored in YOS-20	Sold by DPDO

[1] Hazards
T = Toxic
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I = Irritant
F = Flammable

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP DRY DOCK ACTIVITIES
SHOP ORIGIN _____

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Crane cleaning[a]	Paints, solvents	T,I	Varies; cleaning done every 5 years[a]	SE of DD1 S of B.132 S of B.59	Not applicable	Not applicable	Not applicable	Presently, disposal into storm drain	Present violation In the future, crane cleaning will be treated by P-202
Dry dock wastes[a]	Paints, oil, thinners, solvents, miscellaneous	T,F	Unknown	DD 1, 2, 3	Solids are placed in skip boxes Waste waters washed into harbor	Not applicable	Not applicable	Presently, disposal into harbor	In the future, dry dock grit will be removed by P-174 facility and wastewaters will be treated by P-202

[1]Hazards
T = Toxic
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I = Irritant
F = Flammable

[a]From 1977 CDM report.

HAZARDOUS WASTE INVENTORY

PRODUCTION GROUP SHIPBOARD WASTES
SHOP ORIGIN

Process	Description of hazardous waste	Hazard[1]	Quantity generated annually (express units)	Storage site				Current treatment, disposal, reclamation	Comments
				Location of site	Kind of storage	Quantity stored (express units)	Average storage time		
Waste oil	Lube oil, fuel oil, hydraulic fluid	F	650,000-660,000 gal	South of Pier 6	Oil storage barge YOS-20	40,000 gal	1 month		Sold by DPDO
Oily wastes	Bilge water, waste sludge, waste slush	F	500,000 gal	Pier 6	Industrial waste storage barges YOG-2 SWOB-20 SWOB-14	 120,000 gal 76,000 gal 76,000 gal	Varies	Contracted waste hauler	
Boiler cleaning wastes	Acidic solution	CI	107,000 gal	Tank farm	Steel tanks	2,000 gal per tank	Varies	Contracted waste hauler	
Tank cleaning wastes	Acidic solution, alkaline solution	T.C.	270,000 gal	Tank farm	Steel tanks	2,000 gal per tank	Varies	Contracted waste hauler	
AFFF testing	AFFF	T.C.	16,000 gal	Tank farm	Steel tanks	2,000 gal per tank	Varies	Contracted waste hauler	

[1] Hazards
T = Toxic
C = Corrosive
I = Irritant
F = Flammable

APPENDIX D

SUMMARY OF INDUSTRIAL WASTE HAUL RECORDS

Appendix D. Summary of Industrial Waste Haul Records

Shop billed	Type of waste	Hazardous waste components	Quantity	Comments
07	Miscellaneous wastes	Paint sludge, oily wastes, solvent waste, plastics, degreasers	34,000 gal	Mole clean-up
11	Acid wastes	Hydrochloric acid, hexavalent chrome	1,200 gal	Building 128
17	Caustic wastes	NaOH	800 gal	Building 130
31	Caustic wastes	NaOH, trace oil	1,600 gal	
	Trichloroethane	Trace oil	110 gal	
38	Acid wastes	Chromic acid 20-30 percent	1,050 gal	Building 129
	Miscellaneous chemical wastes		72 gal 304 lb	Building 129
41	Boiler cleaning wastes	Trace oil 0.1-0.5 percent, sulfides, phosphates, detergents, iron	30,000 gal	Ship servicing
	Oily waste (waste sludge, waste slush and bilge water)	Trace oil	105,000 gal	
	Tank cleaning	NaOH 8-10 percent, heavy metals	1,000	Building 128
Public works	Miscellaneous waste	Lime scale removal waste, paint wastes, degreasers, waste oils, plastic wastes	1,350-1,400 gal	Abandoned near Building 212
50	Waste solvent	Toluene 95-100 percent	55 gal	
	Waste oil	Oil, cellulube	4,335 gal	
	Oily waste	Oil 0.1 percent	75,000 gal	
51	Caustic waste	NaOH	21,500 gal	Building 210
	Acid waste	Various acids, hexavalent chrome	13,000 gal	Building 210
	Insulating varnish	Xylene 40-60 percent	135 gal	
56	AFFF	AFFF 1-4 percent	5,000 gal	Shipboard system testing
	Tank cleaning	Oil 4-6 percent, hydrazine, heavy metals	5,000 gal	Ship servicing
	Tank cleaning	Oil, caustic soda, hydrochloric acid, heavy metals	3,000 gal	Building 131
	Oily wastes (waste sludge, waste slush)	Trace oil	44,000 gal	Ship servicing
67	Miscellaneous chemical wastes		6,325 gal	Building 210
71	Paint/water wastes	Heavy metals	325 gal	

Appendix D. Summary of Industrial Waste Haul Records (Continued)

Shop billed	Type of waste	Hazardous waste components	Quantity	Comments
72	Tank cleaning	Trace oil 0.1-3 percent, trisodium phosphate 1-25 ppm	251,600 gal	Ship servicing
	AFFF	AFFF 0.5-6 percent	11,000 gal	Shipboard system testing
	Oily wastes (waste sludge, waste slush)	Trace oil, heavy metals	355,000 gal	Mostly ship origin
	Boiler cleaning	Trace oil, heavy metals	85,000 gal	Ship servicing with shop 41
Unknown	Hydraulic fluid	Hydrazine	35 gal	
	Miscellaneous chemical wastes	Lye, paints, oils, solvents, formaldehyde	1,375 lb 110 gal	Mole
	Sewage/oily waste	Oil 10 percent	800 gal	Sewage tank No. 209

C. 410
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Department of the Navy
Long Beach Naval Shipyard

HAZARDOUS WASTE SHOP LEVEL HANDLING AREAS

ENGINEERING STUDY

ESR 30659

October 1984

(INCLUDES UPDATE OF HW INVENTORY)

LR LEE and RO
CONSULTING ENGINEERS

LEGEND

C :	corrosive	S :	strong sensitizer
F :	flammable	T :	toxic
I :	irritant	* :	see note below

TABLE 3 - 3
STRUCTURAL GROUP - HAZARDOUS WASTES

GENERATOR	WASTE	HAZARDOUS PROPERTIES	HOW STORED	WHERE STORED	QUANTITY	COMMENTS
SHOP 11						
	ALKALINE CLEANING SLUDGE/RESIDUE	C,I	55-gal. drum	South Bldg. 128	2 drums/6 mo.	
SHOP 17						
	ALKALINE CLEANING SLUDGE/RESIDUE	C,I	55-gal. drum	S.E. Bldg. 130	2 drums/6 mo.	
SHOP 41						
	QUENCHING OIL	T	55-gal. drum	Eastside Bldg. 128	4 drums/yr.	
	SILICA SAND		skid box	Northside Bldg. 128	500-1500/yr.	
	SODIUM NITRITE	T,F,P	portable tanks	East of Bldg. 303	*200,000 gal./yr.	
	SODIUM PHOSPHATE	T,C,I	portable tanks	East of Bldg. 303	*25,000 gal./yr.	
	SODIUM SILICATE	T,C,I	portable tanks	East of Bldg. 303	*25,000 gal./yr.	

NOTE: * These amounts are included in the amount of the same waste listed under Shop 71 in Table 3-1.

LEGEND

C : corrosive
F : flammable
I : irritant
S : strong sensitizer
T : toxic

TABLE 3 - 4
ELECTRICAL AND ELECTRONICS GROUP -- HAZARDOUS WASTE

GENERATOR	WASTE	HAZARDOUS PROPERTIES	HOW STORED	WHERE STORED	QUANTITY	COMMENTS
SHOP 51						
	VARNISH	T,F	55-gal. drum	Southwest corner at Bldg. 210	9 drums/yr.	
SHOP 36						
	WASTE OIL	F	55-gal. drum	Southwest corner of Bldg. 210	5 drums/mo.	
	SOLVENTS	I,F	55-gal. drum	Southwest corner of Bldg. 210	2 drums/mo.	
SHOP 66						
	WASTE OIL	F	55-gal. drum	inside Bldg. 210	10 drums/yr.	
SHOP 67						
	MERCURY	T	polyethylene bottles	mercury room Bldg. 197	500 lbs./yr.	
	TRICHLOROETHANE	T,I	55-gal. drum	Southeast of Bldg. 131	4 drums/yr.	

LEGEND

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TABLE 3 - 4
ELECTRICAL AND ELECTRONICS GROUP -- HAZARDOUS WASTE

GENERATOR	WASTE	HAZARDOUS PROPERTIES	HOW STORED	WHERE STORED	QUANTITY	COMMENTS
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SHOP 66						
	WASTE OIL	F	55-gal. drum	inside Bldg. 210	10 drums/yr.	
SHOP 67						
	MERCURY	T	polyethylene bottles	mercury room Bldg. 197	500 lbs./yr.	
	TRICHLOROETHANE	T,I	55-gal. drum	Southeast of ldg. 131	4 drums/yr.	

TABLE 5.1
NAVAL SHIPYARD SOURCES SUMMARY
PAGE 1 OF 2

Sources		Flow	Frequency	Contaminants	Current Destination	Treatable at IWTP	Comments
Boiler Wash		36000 gal/ship	4 ship/yr	sodium nitrate copper, zinc	contractor	Yes	Need to bench test for nitrate, and nitrite removal
CHT Wash		23000 gal/ship	4 ship/yr	sanitary wastes at times copper, zinc	sewer/ contractor	No	Generally, sewerable; Cannot treat sanitary waste at IWTP
Dry Docks:	Wash-down	23000 gal/wash	1 wash/mo	silts and metals	contractor	Yes	May need to separate silts at Dry Dock
	Drainage	73440 gpd	continuous	sandblast grit, oils, paints	contractor	Maybe	Best to remove at source if necessary
Bldg. 52:	X-Ray Processor	80 gal/yr	intermittent	silver	contractor	No	Photographic wastes considered separately
Bldg. 54:	Car Wash	75 gal/mo	--	possibly metals, oil & grease	sewer	--	Treatment is not necessary
Bldg. 100:	Photo Processor	20 gal/yr	intermittent	silver	contractor	No	Photographic wastes considered separately
Bldg. 128:	Quench Tank	500 gal/yr	loaded out once/yr	oil	contractor	No	Will not consider treatment at base
	Plasma Tank	10386 gal/yr	loaded out once/yr	copper, zinc nickel	contractor	Yes	Need transport to IWTP
	Tumbler	3 gal/load	2 load/dy	copper, zinc nickel	---	Yes	Currently running dry. Need to be able to contain water

TABLE 5.1
NAVAL SHIPYARD SOURCES SUMMARY
PAGE 2 OF 2

Sources		Flow	Frequency	Contaminants	Current Destination	Treatable at IWTP	Comments
Bldg. 129:	Air compressor diagnostic center	1500 g/h	6-7 times/yr	possibly metals	sewer	Maybe	Need to test wastewater
Bldg. 130:	Deburring equipment	900 gal/yr	loaded out once/year	solvent	contractor	No	Will not consider treatment at base
Bldg. 131:	Laundry equipment	170 gal/dy	continuous	detergent, bleach	sewer	No	Sewerable
	Water Jet Cutter	1500 gal	loaded out once/year	copper, nickel, zinc, chromium	contractor	Yes	Need to clean out tank
Bldg. 132E:	Hydrotest-Pipe	2000 gal/dy	continuous	metals,trisodium-phosphate, citric acid	sewer	Yes	Wastewater may already be sewerable
Bldg. 132:	Hydrotest-Valves Pump test Steam Generation	167560 gal/yr	periodic	oil (5-8%), copper, zinc	contractor	Yes	Need to seperate oil
Bldg. 210:	Rinsewater	4000 gal/wk	periodic	chromate	IWTP	Yes	Currently, goes to IWTP
		5400 gal/wk	periodic	alkaline	IWTP	Yes	Currently, goes to IWTP
		3600 gal/wk	periodic	caustic	IWTP	Yes	Currently, goes to IWTP
		4200 gal/yr	loaded out once/year	cyanide	recycle	Maybe	Need to set up cyanide treat./get permit
	Photo Processor	3 gal/mo	periodic	silver	contractor	No	Photographic wastes considered separately
Bldg. 300:	Photo/Micro Processor	45 gal/mo	continuous	silver	contractor	No	Photographic wastes considered separately
		25 gal/mo					
Bldg. 303:	Silk-screening	55 gal/mo	periodic	silver	contractor	No	Photographic wastes considered separately

Naval Complex Long Beach
Document Number: 01389110.001
AR File:

QUALITY OF THE DOCUMENT.

RCRA FACILITY ASSESSMENT

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CA
EPA REGION 9 ID NUMBER CA6170023109

Submitted to:

EPA Region 9
215 Fremont Street
San Francisco, CA 94105

Prepared by:

Joe Zarnoch
Department of Health Services
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245 W. Broadway, Suite 350
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November 30, 1989

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Table 1
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.1 Building 118 Hazardous Waste Storage Facility (1980 - Present)	- 3 inch diameter hole in ramp to bermed section where drums are stored. - Drain pipe through the berm which emptied onto the street. - Uncovered storm drain in bermed area. - Stained areas, indicating earlier spills, observed in an unsecured area where hazardous wastes were stored.	- Evidence that structural violations have been corrected. - Evaluation of potential releases through the berm drain pipe or into the storm drain. - Evidence that incompatible wastes are no longer kept together at this facility. - Evaluation of any drum crushing activity areas.	- Visual site inspection to determine current condition of unit. - Possibly sample areas where stains were found (indication of earlier spills).
4.2 On-Site Still (Solvent Reclamation) (Dates Unknown)	- None reported.	- Evaluation of potential threat to the environment. - Release controls for the unit. - Characteristics of wastes placed in the unit over time. - Dates of operation. - History of hazardous waste releases.	- Visual site inspection to determine current condition of unit, including: unit release controls, waste characteristics, and potential threats to the environment.
4.3 On-Site Still (Freon Reclamation) (Dates Unknown)	- None reported.	- Potential threat to the environment. - Release controls for the unit. - Characteristics of wastes placed in the unit over time. - Dates of operation. - History of hazardous waste releases.	- Visual site inspection to determine current condition of unit, including: unit release controls, waste characteristics, and potential threats to the environment.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.4 Tank Farm 303: Waste Oil Storage Site (Dates Unknown)	- None reported.	- Evidence that mechanisms for spill containment and spill cleanup have been provided, if this site is still being used. - Investigation of evidence for hazardous waste spills that have taken place at this site. - Evidence that hazardous waste spills, if they have in fact occurred, have been remediated. - Evidence that the large waste sandblast grit pile has been remediated.	- Visual site inspection to determine current condition of unit.
4.5 Building 54 Hazardous Waste Storage Area (Dates Unknown)	- None reported.	- Characteristics of wastes placed in the unit over time. - Dates of operation. - History of hazardous waste releases.	- Visual site inspection to determine current condition of unit.
4.6 Building 202 Hazardous Waste Storage Area (Dates Unknown)	- None reported.	- Characteristics of wastes placed in the unit over time. - Dates of operation. - History of hazardous waste releases.	- Visual site inspection to determine condition of unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.7 Harbor Sediments (Early 1940's - 1978)	- About 300 to 400 gallons of rust preventative and up to 60 gallons of red lead caulking material were discharged into the harbor through the dry dock areas. - Unknown qualities of PCBs, acids, solvents, oil, and grease were discharged into the harbor from the blow-down and flushing of utility shop boilers, water softeners, and systems.	- Documentation of wastes. - Location of all harbor discharge points. - Information on recent Long Beach Harbor dredging operations and availability of any sampling analyses data.	- Visual site inspection to determine current condition of unit. - Possibly collect samples near the harbor drainage points for pollution analysis. - Assessment of potential human health risks existing from food chain pathways.
4.8 Building 210 Trichloroethylene Disposal Site (1974 - 1980)	- Between 1974 and 1980, about 200 gallons of TCE was disposed of along the fence-line north of Building 210.	- Documentation of amount of TCE actually discharged at this site. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of unit. - Possibly collect soil samples for contamination analysis.
4.9 Building 129 Ground Floor Spills (1940 - 1973)	- Unknown quantity of waste spilled from process tanks during production and clean-out; overflow of waste trenches contaminated the wood block and dirt floor around the process tanks.	- Information on the construction design of four underground sumps, how they are drained, and the potential for leaks. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of unit. - Possibly sample soil both inside Building 129 and the surrounding area to determine the degree of contamination.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.10 Lot H: Past Scrapyard Operations (- 1957)	- Reported spills of battery acid and small, unknown amounts of mercury (area has subsequently been paved).	- Startup date. - Documentation of spills at this site. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit. - Possibly sample soil to determine pH and other potential contamination. - Environmental assessment and description of clean-up operations at a similar site, Scrapyard 2.
4.11 Hillside East of Dry Dock 1 (Dates Unknown)	- An estimated 6,400 cubic yards of sandblast material was used as fill to form this hill. The spent sandblast material is estimated to contain 46,000 pounds of cuprous oxide. Hillside is currently planted with vegetative cover.	- Dates of operation. - Documentation of the quantity of disposed sandblast. - Documentation of material contained in the sandblast. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit. - Assessment of potential for cuprous oxide erosion and subsequent harbor contamination.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.12 Parting Lot X: Drum Storage Area and Sandblast Material Disposal Site (1971 - 1975)	- Located over a pre-existing sandblast material disposal pit. Approximately 72 to 100 tons of sandblasting waste, containing toxic paint residue with tri-n-butyltin oxide, was disposed of in the pit. Site is currently occupied by solar dome assembly and testing area with several support buildings and a parking area.	- Site permit history, and why this site was not identified in the operation plan. - Documentation of the types and quantity of wastes disposed of at the site. - Documentation of chemical releases from drum storage. - Documentation of the depth of the waste in relation to the water table. - Construction details; including release controls for the site. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.13 Building 314 Proposed Hazardous Waste Storage Facility	- Not operational.	- Types and quantities of containerized wastes. - Method of drum storage and drum crushing. - Methods of cleaning the drums before storage and/or before crushing, and disposal and/or treatment of the resulting waste. - Method of treatment and/or disposal of wastes which escape the drums as part of the drum storage and/or crushing process. - Method of cleaning the drum crushing equipment after crushing the drums, and method of treatment and/or disposal of the resulting hazardous waste. - Procedure for storing incompatible wastes.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.14 Utilities Shop Operation (Shop 03): Steam Boiler, Air, Electrical Substation (Dates Unknown)	- 20 leaky transformers, containing PCBs, were found in 1987. - Transformer fluids discharged to storm drain. - Waste lime sludge from acetylene generators discharged to the sewer.	- Dates of operation. - Documentation of types and quantities of wastes released. - Type of maintenance conducted on site. - Was electrical fluid ever changed or filtered, and if so, where was it stored? - How were PCB spills and leaks handled? - How extensive are the leaks from the transformers, and how are they handled? - Are the leaking transformers on cement pads or sealed cement pads? - Where are out-of-service transformers and switches stored, and where are they drained? - Investigation of transformer fluids discharged to a storm drain. - Closure information, if the unit is inactive, and/or for parts of the unit which are inactive.	- Visual site inspection to determine condition of the unit. - Assessment of potential soil contamination.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.15 Maintenance Operations (Shop 07): Painting, Plumbing, Carpentry, Machine Maintenance, Pest Control, Custodial Services and Hazardous Waste Pick-up (Dates Unknown)	- Waste paints, solvents, and acids reportedly discharged to storm drain until the late 1970s. - Rinseate containing pesticide and herbicide residues commonly discharged to the ground and sanitary sewer.	- Dates of operation. - Where is the area where rinseate containing pesticide and herbicide residues has been discharged to ground? - Documentation of pesticides and herbicides handled presently and in the past by the Maintenance Operations. - Why herbicide and pesticide rinseate was discharged on the ground and into the sanitary sewer, while other categories of waste were only disposed of only in the sanitary sewer? - Documentation of types and quantities of wastes released. - Methods of handling and controlling waste spills. - Investigation of waste discharged to a storm drain. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.16 Shipfitter (Shop 11): Ship Structural Part Fabrication, Assembly and Installation (1945 - Present)	- Before the mid-1960's, at infrequent intervals, waste rust preventative and waste oils were flushed into the Harbor's West Basin.	- Who handled process dip tank sludge disposal when a contractor did not? - Where was process dip tank sludge disposed of prior to the mid-1950's? - Where were spent process dip tank fluids disposed of when not handled by a contractor? - How and by who was process dip tank waste disposed of prior to the mid-1950's? - Quantities of sandblast wastes generated by this shop. - Information on the ultimate fate of dry dock waste, which included red lead caulking, rust preventative, and waste oils. - Location of dry dock waste discharge point into harbor. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.17 Sheet Metal Shop (Shop 17): Heating, Air Conditioning, Furniture and Sheet Metal Product Fabrication and Repair Shop (Dates Unknown)	- Caustic rinse tank continuously overflowed to the sanitary sewer. - Prior to 1972, waste was disposed of at the waste pits on the Mole.	- How was degreaser waste, that is removed once a year, handled and disposed of between 1969 and 1976? - Information on ultimate fate of drydock waste, prior to 1978, which included 200 pounds per year of lead wastes. - Review of disposal practices for oil and solvent contaminated rags. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.
4.18 Pipefitters (Shop 56): Pipefitting, Wave Guide and Refrigeration Operations (Dates Unknown)	- Approximately 800 gallons of rinse water, contaminated with acids and metals, was drained daily into the storm sewer until the early 1970's. Also, TCE was discharged annually.	- Dates of operation. - Documentation of the current waste handling and disposal practices for waste freon, resin, oil and dry cleaning solvents. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.19 Electrical (Shop 51): Component Repair and Replacement (1975-Present)	- Prior to 1981, electrical equipment containing PCBs were discarded with general refuse.	- Documentation of what is done with the significant amounts of hazardous waste produced as part of the plating and cleaning operations, including waste plating, caustic and solvent solutions. - If waste is or was stored on site, evidence as to where the waste was stored, whether or not the site was paved, whether or not the site was bermed, and information on how leaking site was bermed, and information on how leaking drums were or are handled. - Documentation and history of spills and releases. - Documentation of types and quantities of hazardous wastes handled (including mercury). - Information on ultimate fate of electrical equipment containing PCBs. Prior to 1981, these materials were discarded with general refuse. - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.20 Electronics: Instrument, Communication Equipment, Combat Electronics Systems and Support Electronics Systems Repair (Shop 67) (Early 1970's to Present)	- Prior to 1980, dumping of waste TCE, acids, and plating solutions (from the printed circuit board production operation) onto the ground along property line north of Building 210.	- Did the practice of disposal onto the ground take place at the previous shop location, prior to 1975? - Why is the printed circuit board production operation the only operation identified as dumping waste onto the ground? - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit. - Possibly sample soil along property line north of Building 210.
4.21 Antenna Shop (Dates Unknown)	- None reported.	- Dates of operation. - Was storage site southwest of Building 210 paved and bermed? - What spill control measures were taken? - How were leaking drums handled? - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.22 Weapons Shop: Maintenance Repair of Firing, Launching, Tracking and Guidance Systems (Shop 03) (1965 - Present)	- None reported.	- Apparently, Weapon Shop waste was also stored in drums southwest of Building 210. The same potential release concerns expressed for the Antenna Shop also apply to the Weapons Shop. - Are waste oils still moved to Pier 6 and transferred to a barge? - Documentation of release control measures instituted at Piers 4 and 6 (from 1965 to 1967, waste barrels were collected on Pier 4). How were leaking drums handled? - Identification of final disposal site for waste oils currently generated by the Weapons Shop. - Documentation and history of waste solvent spills and releases from storage tank behind the old hydraulic shop in Building 132. - Documentation of the quantity of spilled mercury placed in general refuse containers (before formation of disposal team in 1970's) and identification of final mercury disposal site.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.22 (con't.)		- Documentation of radio tube disposal practices before radioactivity analysis was conducted (starting in 1978). - Closure information, if the unit is inactive.	
4.23 Supply Department Materials Procurement and Distribution (Code 500) (Dates Unknown)	- Occasional leakage of chemicals stored in a quonset hut. An unknown amount of chemicals may have leaked through the wood floor into the ground. - 15 drums of TCE spilled behind Building 129 in	- Dates of operation. - Evidence as to whether or not the leakage from the quonset hut was onto unpaved ground. - Evidence as to whether or not TCE reached the soil. - Disposal locations for low-level radiation cathode ray - Closure information, if the site is inactive.	- Visual site inspection to determine condition of the unit. - Possibly sample soil (in area of quonset hut and behind Building 129) to assess contamination from chemical leakage.
4.24 Quality Assurance Laboratory (Dates Unknown)	- None reported.	- Dates of operation. - Documentation of all releases from this unit, including waste oil storage tank. - Update of unit disposal practices. Are waste oils still transferred to Pier 6? - Closure information, if the unit is inactive.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.25 Above Ground and Below Ground Tanks (26 units) (Dates Unknown)	- None reported. Tank inspection program instituted in 1965.	- Dates of operation. - Evidence of whether or not any underground tanks leaked prior to 1965 (before leak program). - Leakage assessment for all abandoned, replaced, and removed underground storage tanks. - History of releases from all above ground tanks. - Update status of both above ground and below ground tanks. - Closure information for inactive tanks.	- Visual site inspection to determine condition of the unit.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.26 Mole Solid Waste Operations Site (mid-1940's to mid-1960's)	- Solid waste landfill, although partially filled cans of paint wastes and oily wastes were commonly buried. were commonly buried.	- Description of any release control measures instituted at the site. - An environmental assessment (possibly sampling) to identify types and quantities of disposed waste. - Assessment of potential releases due to tidal influences on extractables in the saturated zone. - Evidence to ascertain whether low-level radiation cathode tubes were disposed of at this site. - Available closure information. - Update status of both above ground tanks.	- Visual site inspection to determine condition of unit. - Possibly sample to assess contamination.
4.27 Chemical Material and Waste Storage Area (mid-1960's to 1980)	- Noticeable liquid leakage from damaged drums. Approximately thirty acres potentially contaminated.	- Prescription of the characteristics and quantities of wastes previously stored at this site. - Description of any release control measures instituted at this site. - Environmental assessment (possibly including sampling) to identify nature and extent of contamination. - Available closure information.	- Visual site inspection to determine condition of the unit. - Possibly sample soil to assess contamination from chemical leakage.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.28 Industrial Waste Disposal Site (late 1940's to early 1970's)	- Approximately 80,000 gallons of liquid waste disposed of annually over a period of 30 years. Waste included: oily waste from ship bilges and tanks, industrial process bottom sludges, and acidic and caustic waste from various LBNS shops.	- Location and number of pits at the site. - Description of the characteristics and quantities of waste buried at the site. - Environmental assessment of site hydrogeology, potential subsurface contamination migration, and possible impact on San Pedro Bay food chain. - Available closure information.	- Visual site inspection to determine condition of unit. - Possibly sample soil to assess contamination.
4.29 Mole Extension Sites (Dates Unknown)	- Sandblast grit, construction and demolition debris, ship's keel blocks, boiler-bricks, asbestos, trash and soil were bulldozed into the ocean.	- Dates of operation. - Environmental assessment to identify nature and extent of contamination.	- Visual site inspection to determine condition of the unit. - Possibly sample for metals and other contaminants.
4.30 Skeet Range Solid Waste Fill Area (mid-1939's to 1968)	- No reports of industrial waste disposal.	- Information may be incomplete. How was it determined that only solid non-industrial waste was buried at this site? - Available closure information.	- Visual site inspection to determine condition of the unit. - Verification of non-hazardous waste disposal.

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Table 1 (continued)
Long Beach Naval Shipyard and Long Beach Naval Complex
Summary of Solid Waste Management Unit Assessments

SWMU/DATES OF OPERATION	EVIDENCE OF RELEASE	ADDITIONAL DATA NEEDS	FURTHER ACTION RECOMMENDED
4.31 Boat Disposal Location (1942 to 1965)	- Oily waste was used for soil compaction and dust control at this disposal site. Sandblast grit also buried.	- Verification of disposal waste. - Were other liquid wastes buried? - Did waste oils contain solvents, metals, or PCBs? - Environmental assessment to identify solvent, oil, PCB, and metal contamination. tion.	- Visual site inspection to determine condition of unit. - Possibly sample to assess contamination.

APPENDIX N

REGULATORY SITE WALK MEETING MINUTES AND REGULATORY COMMENTS AND RESPONSES

APPENDIX N
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15 April 1998	DTSC, U.S. EPA, RWQCB	Site Walk Meeting Minutes	1
19 August 1998	DTSC, U.S. EPA, RWQCB	Site Walk Meeting Minutes	1
22 September 1998	DTSC, U.S. EPA, RWQCB	Site Walk Meeting Minutes	1
27 October 1998	DTSC, U.S. EPA, RWQCB	Site Walk Meeting Minutes	1
20 January 1999	DTSC, U.S. EPA, RWQCB	Site Walk Meeting Minutes	1
27 September 1999	U.S. EPA	Concurrence on Draft Report, AOC MISC 8, No Further Action	2
30 September 1999		Navy Request to update AOC MISC 8 to No Further Action	2
07 October 1999	RWQCB	Concurrence to Charge AOC	2
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MEETING MINUTES

SUBJECT: Onsite Meeting held at LBNSY

MEETING DATE: 15 April 1998, 0900 to 1600

ACTIVITY: Long Beach Naval Shipyard (LBNSY) Areas of Concern (AOCs) Investigation

ATTENDEES: Alvaro Gutierrez (DTSC)
Martin Hausladen (U.S. EPA Region IX)
Hugh Marley (RWQCB)
Kurt Baer (SWDIV)
Dave Bjostad (CDM Federal)

PURPOSE:

The purpose of this onsite meeting was to view proposed sampling locations and agree on recommended changes to locations and numbers of samples.

DISCUSSION:

The following summarizes the changes in the proposed sampling locations and analytical tests discussed and agreed upon for each of the AOCs visited. CDM Federal will incorporate these changes in the text, tables, and figures of the Field Sampling Plan (FSP) of the Final Work Plan.

1. Building 210 Plating Shop (AOC PT 1): The regulatory agencies requested 10 sampling locations for soil and groundwater samples. This represents an increase in samples scoped in to the Draft Work Plan (a large number of aboveground storage tanks [ASTs] exist at this AOC). Three samples will be collected at the low points where sumps and pumps are present, one sample will be collected where the drainage swale has a 90-degree turn in the center of the plating shop, one sample will be collected in the southwest portion of the plating shop near process tanks, and five sampling locations will be outside the plating shop as close to the building as possible. Five samples are proposed for outside the plating shop because access is poor within the plating shop. Many tanks are only one or two feet apart, the floor beneath the tanks is approximately three feet below grade, and there are many pipes.

2. Building 128 Plasma Arc Cutting Area (AOC PT 11): The regulatory agencies stated that one soil sample and one groundwater sample (northeast of the tank) are acceptable at this AOC because the process did not use chemicals, rather it used acetylene and plasma-arc torches to cut sheet metal beneath water. Water was generally reused. Ron Johnson

(LBNSY) later confirmed that water was reused and metal slag was removed from the tank approximately once every one to two months.

3. Building 128 Wood Block Floors (AOC MISC 1): The regulatory agencies requested samples near oily stains and machinery and distributed throughout the building. Wet soil at the raised metal stand in the northern part of Building 128 should be sampled. The agencies observed that concrete exists beneath the wood block floor at many locations. Where concrete exists beneath wood block floors, sampling is not necessary. CDM Federal will pull up wood blocks at several locations and note the presence of concrete.

   The agencies requested sampling at two additional areas at Building 128: (1) where oil is leaking from a punch shearing machine on the western side and (2) at a sump containing liquid near a vapor degreaser tank in the northwestern portion.

4. Building 128 Quench Oil Tanks (AOC PT 10): Agencies agreed to collecting two samples between tanks, but two additional sampling locations should also target the utility trench that may have acted as a drainage conduit. Mr. Gutierrez would like samples beneath the utility trench, but Mr. Bjostad stated that a sample one foot away from the trench may be the closest practical location. Because 1,1,1-trichloroethane was used in one tank (based on its label), volatile organic compounds (VOCs) analysis should be added for samples from this AOC. The age of the tanks was later estimated at 20 to 30 years according to Ron Johnson. The trench flows to the sewer on the southeast side of the tanks.

5. Building 128 Foundry (AOC MISC 5): There will be no changes to the Draft Field Sampling Plan. Bechtel collected one sample in the foundry recently, so these data can be reviewed and used.

6. Building 130 Wood Block Floor (AOC MISC 3): The floor in this building is actually made of concrete bricks, not wood. Also, the building is raised about three feet above the outside pavement surface. The agencies agreed that if concrete is greater than six inches thick, sampling is not required at these locations.

7. Building 130 Plating Shop (AOC PT 6): No changes are required for the Draft Field Sampling Plan. A more detailed map of this AOC will be drafted for the PA report.

8. Building 130 PCB sampling sites (AOCs PCB 16 and PCB 20): Based on the PA performed in March 1998, both AOCs are in the northwestern portion of the Shop 17 compound. The agencies agreed that only one wipe sample needs to be collected in this area, because it is small and no pavement stains were observed. Behind the fence to the west, paint stains were observed on the pavement; the agencies would like soil sampled in this area, with analysis for VOCs and metals.

9. Public Works Yard (AOC MISC 9): This area was recommended for sampling in the Draft PA Report; the paint booth area and steam cleaning and small solvent tank area were observed. At the paint booth, the agencies stated that four samples were not required but that three will suffice; the fourth sample should be moved to the 6 foot by 6 foot by 2-inch high asphalt berm located east of the paint booth. The activities at this berm are unknown, so a full suite of analyses should be performed; a pesticide shop was located nearby at Building 7.

   At the steam cleaning and 20-gallon solvent tank area, one soil and groundwater sample will be collected and analyzed at the low point in the parking lot where wash water would have drained and possibly leaked through cracked asphalt.

10. Behind Warehouses A and C where the Gun Mount Storage, Cleaning, and Repair Yard was located (AOC HIST 5): No changes to the Draft Field Sampling Plan are required. An oil spill was also reported in this area in 1992 but was not confirmed because (1) the LBNSY spill log maintained by the LBNSY Environmental Department did not show any such spill, (2) personnel interviewed did not recall such a spill, (3) no known source of 1,000 gallons of waste oil was located in this area, and (4) there are no pavement stains in this area. Sampling for AOC HIST 5 may help address whether such a spill ever occurred.

11. Mr. Gutierrez inquired why better photographs of Satellite Accumulation Points (SAPs) such as the three located behind Warehouse A were not included in the Draft PA Report. Mr. Bjostad stated that the SAPs are no longer operational and many of the containers are no longer in place. More SAPs were located in the PA performed in March 1998 for the 157 AOCs than the PA performed in January 1998 for the 25 AOCs.

12. Drydock 2 (AOC SWS 4): The proposed sediment sampling point at the north end of the bottom of the drydock was observed by walking to the bottom and this sampling location was approved by the agencies.

13. Building 129 Dip Tanks (AOC PT 7): Two sumps were identified and the agencies agreed that two samples rather than four could be collected. It was later determined that these sumps were not AOC PT 7. Ten cleaning tanks and ten rinse tanks formerly existed at the Marine Shop Cleaning Facility and were used for a short duration beginning about 1977. These former tanks were located at the same locations as the sumps viewed during this sitewalk. Therefore, four soil samples and three groundwater samples as proposed in the Draft FSP will be retained.

14. Building 129 Plating Shop (AOC PT 2): The plating shop was located at the northwest corner of Building 129, but conflicting information indicates that the plating shop may

have been outside or inside. No tanks or remnants were observed at this site walk. Because Building 129 is Installation Restoration (IR) Site 9 and many samples have been collected in this area, the agencies agreed that extensive sampling is not required under this AOC project. Instead, the agencies proposed one soil sample just outside the southeast corner of a 2-inch deep trench around a 12-foot by 20-foot area.

15. Building 129 Diesel Test Cell Area: This area was not proposed for sampling in the Draft Work Plan because the PA had not yet been performed. It will likely be recommended for sampling now that the PA was performed in March 1998.

16. Building 129 Wood Block Floors (AOC MISC 2): As with Building 128, the agencies observed that concrete underlies much of the wood block floors. As for Building 128, CDM Federal will look under more wood blocks and assess whether any areas do not have concrete; only those areas will be sampled.

17. Building 132 Dip Tanks (AOC PT 8): The location of these tanks was not known until the PA was performed in March 1998, so the Draft Work Plan did not identify the correct location. These three tanks are located in the northwestern part of Building 132 and consisted of one molten tin and two molten babbitt tanks. Babbitt tanks contained mixtures of 89% tin, 7% antimony, 3% copper, and 1% other metals. The agencies agreed that two soil samples should be collected in this area, with analysis for metals.

18. Building 132 Wood Block Floors (AOC MISC 4): As with Buildings 128 and 129, the agencies agreed that CDM Federal should check for the presence of concrete beneath the wood block floors. Where concrete does not exist and oily stains are present or machinery was used, soil samples should be collected; where concrete exists and appears intact, samples are not required by the agencies.

19. Building 132 Second Floor Plating Shop (AOC PT5): Because this plating shop is on the second floor and not directly underlain by soil or groundwater, the Navy proposes reducing sampling to one soil and groundwater sample beneath the pavement at the west side of Building 132 where plating solutions were pumped from vehicles to the second floor tanks.

MEETING MINUTES

SUBJECT: Work Plan Addendum Number 2 - Recommended Sampling Locations for Ten Areas of Concern (AOCs)

MEETING DATE: 19 August 1998

ACTIVITY: Long Beach Naval Shipyard (LBNSY) AOCs Investigation

ATTENDEES:
Alvaro Gutierrez (DTSC)
Martin Hausladen (U.S. EPA Region IX)
Hugh Marley (RWQCB)
Kurt Baer (SWDIV)
Dave Bjostad (CDM Federal)
Greg Maynor (CDM Federal)

PURPOSE:

This meeting was held to discuss the number of samples and locations recommended in Draft Work Plan Addendum Number 2, dated 18 August 1998, for ten AOCs. The meeting was onsite at the Long Beach Naval Shipyard and consisted of visiting each of the ten AOCs proposed for sampling.

Note: the items below are presented in the order in which they appear in Work Plan Addendum Number 2, not in the order in which the sites were visited in the field.

DISCUSSION:

1. CDM led a tour of the Former and Current Oil Production Areas and identified sampling locations.

2. The location of sampling the Former Acetylene Generating Plant, located inside the Transportation Facility Yard, was identified.

3. The RWQCB recommended that one additional soil and groundwater sample be added for the Chemical Cleaning Area southwest of Building 128. By adding this third groundwater sample, the groundwater flow direction can be estimated, using sample locations that form a triangle. The direct push sampling rods would be left in place overnight to obtain accurate water level measurements.

4. At the Former Storage Area for Scrap Metals and Oils, the DTSC recommended that samples be located closer to Building 132 than shown in Figure 5 of the Draft Work Plan Addendum Number 2 because the main storage area was likely adjacent to Building 132.

U.S. EPA requested that PCBs be added to the list of analyses for samples from this site because oils may have contained PCBs.

5. At the Diesel Test Cells in the northeast corner of Building 129, the RWQCB recommended two additional soil and groundwater samples inside the building next to the utility trenches that appeared to have contained fuels.

6. At the Transportation Facility Yard, a total of 15 soil and 15 groundwater samples were recommended in Work Plan Addendum Number 2. The DTSC requested that one additional soil and groundwater sample be collected in Building 54 next to the oil changing service pits (only one sampling location had been planned to cover the two pits). At the western portion of the yard, one sample location will be moved closer to a grease pit. DTSC requested that (1) former buildings be shown in dashed lines in Figure 7 to distinguish them from current buildings and (2) buildings be labeled in Figure 7 (e.g., label Building 73 as Bicycle Shop/Tire Services). U.S. EPA asked about radiation warning signs at Building 52 (Mr. Baer later discovered that this issue was satisfactorily resolved in a previous report). Finally, Mr. Bjostad stated that two hydraulic cranes/lifts will be addressed under a separate delivery order, so the two sampling locations shown in Figure 7 of the Draft Work Plan Addendum Number 2 can be moved to other locations.

7. At the Equipment with PCB Oils AOC in Building 132, DTSC and U.S. EPA recommended that one of the four wipe samples be moved to underneath the equipment, with the three others forming a triangle around the equipment.

8. At the Cleaning Tanks in Building 205, the regulatory agencies recommended that sampling locations be moved several feet to a location directly over the former aboveground storage tanks. The northernmost sample should be moved a few feet to the west, to locate the groundwater sample more downgradient of the tanks.

9. The Tank 216.1 AOC sampling locations from previous studies were identified. Samples have been collected on three sides of the UST, but not on the northernmost side, which happens to be hydraulically downgradient; therefore, the sample location proposed in Draft Work Plan Addendum Number 2 was accepted.

10. At Tanks 202.1, 202.2, and 202.3, the regulatory agencies recommended that soil and groundwater samples be collected inside the building because these locations would be hydraulically downgradient of the tanks. Sampling adjacent to the tanks (sumps) on the north side is recommended, rather than sampling directly beneath the tanks, for the following reasons: (1) the bottoms of the tanks are made of concrete, (2) tank bottoms are about 10 feet below ground surface, and (3) they are covered at ground surface with large metal grates. Therefore, sampling will be attempted beneath the hallway north of the tanks after concrete is cored.

In addition, another potential source of wastes was identified by the regulatory agencies: sandblasting at Buildings 203 and 204. The regulatory agencies recommended that (1) one sampling location be moved from the tanks at Building 202 to the area between Buildings 203 and 204; (2) one sampling location be moved from the tanks at Building 202 to an area with hydraulic fluid oil stains between Buildings 203 and 204. (Soil at these latter two sampling locations should be collected at one foot below ground surface, with groundwater sampling only if soil contamination is identified); and (3) one storm drain sediment sample be collected south of the area between Buildings 203 and 204.

In summary, six sampling locations as proposed in Draft Work Plan Addendum Number 2 will be retained, but moved to locations that will better characterize waste source areas. One sediment sample will be added to the Final Work Plan Addendum Number 2.

11. One new AOC was identified by the regulatory agencies south of Building 132: Coolant recovery tanks. It is not clear that these tanks were ever used (closeout paper work attached to the tanks indicate that the tanks were never used).

MEETING MINUTES

SUBJECT: Site Visit for Fixed Treatment Unit (FTU) Areas of Concern (AOCs)

MEETING DATE: 22 September 1998

ACTIVITY: Long Beach Naval Shipyard (LBNSY) AOCs Investigation

ATTENDEES:
Alvaro Gutierrez (DTSC)
Martin Hausladen (U.S. EPA Region IX)
Hugh Marley (RWQCB)
Kurt Baer (SWDIV)
Dave Bjostad (CDM Federal)
Brendan Boyd (CDM Federal)

PURPOSE:

This meeting was held at the former Long Beach Naval Complex to visit four FTUs and discuss whether or not sampling is required to close these AOCs.

DISCUSSION:

1. FTU 11 - Can Crusher at Naval Station Building 102. The can crusher was used for crushing empty containers less than 55 gallons in size. It is no longer in place, but was located on the northeast side of Building 102 where a concrete pad still exists. This area was the recycling area for aluminum cans and other recyclable materials. Because the can crusher was used for empty cans and no stains on the pavement were observed, all parties agreed that sampling is not required to close this FTU.

2. FTU 09 - Liquid Industrial Waste (LIW) tanks near Drydock 1. This set of three aboveground tanks and one clarifier, built in the early 1990s, was used to treat washdown water and seepage from Drydock 1 floors and walls. Wastewater was treated by gravity settling of sediments and phase separation of oils and water. The treated wastewater was analyzed and pumped to the sanitary sewer if below industrial wastewater permit discharge limits. Wastewater above the limits was pumped to the Industrial Wastewater Treatment Plant (IWTP).

   A sump within the concrete berm was identified, but its exact use was not known. The regulatory agencies recommended sampling the sediment/sludge in the sump (if it discharges wastewater via subsurface pipes) to characterize whether it is considered a hazardous waste. *Subsequent conversations with Ron Johnson, Site Caretaker, indicate that the sump was used for rainwater collection only and that a pump in the sump discharged water through aboveground pipes back into the LIW for treatment.*

Therefore, the Navy believes that this FTU can be closed without sampling. However, lines connecting the FTU to the IWTP and to the sanitary sewer system must be disconnected before closure can be completed.

3. FTU 10 - LIW tanks between Drydocks 2 and 3. The discussion for FTU 09 applies to FTU 10.

4. FTU 06 - Bilge Oily Wastewater Treatment System (BOWTS). BOWTS, located behind Building 132, was constructed in 1993. Similar to the LIWs system, a sump was identified but its exact use was not known. The sump contained approximately one inch of standing water and its liner appeared to be flaking off. The regulatory agencies recommended collecting two soil and groundwater samples to assess whether any wastes in the sump may have leaked into the ground. Mr. Baer disagreed with the recommendation for sampling because of the low likelihood for contamination due to the recent construction of BOWTS. *Subsequent review of blueline drawings and conversations with Ron Johnson indicate that the sump was used for rainwater collection only and that a pump in the sump discharged water through aboveground pipes back into the BOWTS for treatment. The pump had a float sensor that automatically turned the pump on when a certain amount of water had collected in the sump. Further, Mr. Johnson stated that the same epoxy sealant used to line the bottom of the floor within the berms was also used to line the sump. He stated that the flaking of the liner within the sump has occurred in the 1.5 years since BOWTS operations have ceased because BOWTS is no longer inspected and maintained regularly, as occurred when it was operational. Therefore, the Navy believes that this FTU can be closed without soil or groundwater sampling.*

MEETING MINUTES

SUBJECT: Site Walk for Identification of New Areas of Concern (AOCs)

MEETING DATE: 27 October 1998

ACTIVITY: Long Beach Naval Shipyard (LBNSY) AOCs Investigation

ATTENDEES: Alvaro Gutierrez (DTSC)
Martin Hausladen (U.S. EPA Region IX)
Hugh Marley (RWQCB)
Duane Rollefson (SWDIV)
Ron Johnson (LBNSY)
Dave Bjostad (CDM Federal)

PURPOSE:

This meeting was held to identify additional buildings that might need some type of assessment or investigation.

DISCUSSION:

1. Building 886 - Visited this former Less-Than-90-Day Hazardous Waste Storage Facility located on the southeast corner of Pier Echo. It is already being investigated as one of the 182 Group B AOCs. As discussed in a meeting on 11 May 1998, it is recommended for no further action. Regulatory agencies agreed that no sampling is required.

2. Building 312 - Visited this former hose cleaning facility in a paved, fenced area east of Building 303. Regulatory agencies agreed that no further action is required.

3. Building 131 - Walked through the entire interior of Building 131, the central tool crib that was formerly the pipe shop. Identified a laundry for cleaning respirators and other health and safety equipment inside the north end of Building 131; the hood and ventilation system located above the two aboveground "sterilizer tanks" suggest that a material other than just steam was used. Also identified an area inside the north end of Building 131, east of and adjacent to the laundry area, that was used as a pipe cleaning dip tank area, according to Mr. Johnson. Based upon PA findings and a review of Supplemental Groundwater Investigation (SGI) results, sampling should be considered in these two areas.

4. Building 130 - Walked through Building 130. The floor of this building is already one of the 182 Group B AOCs. In June 1998, CDM Federal cored through the concrete floor at five locations and found it to be between 8 and 12 inches thick. As agreed with

the regulatory agencies in May 1998, if the floor was greater than 6 inches thick, sampling beneath the concrete floor was not required, so no further action is planned for this AOC.

5. Building 109 - Walked throughout the interior of Building 109, which was formerly a welding school and former paint shop. Most of the inside of the building consists of a wooden floor, although the northern end consists of two rooms/chambers, one with saws and one empty. The second floor consists of practice welding booths. A UST outside the west side of Building 109 was removed in 1992; an SCAPS investigation was performed in 1997. The regulatory agencies recommended approximately two borings and sampling, focusing on the former UST area, unless PA results suggest that there was another area at Building 109 that was more likely for release of hazardous materials or wastes.

6. Building 97 - Walked throughout the interior of Building 97. Regulatory agencies agreed that no further action is required.

7. Building 99 - Walked throughout the interior of Building 99. Regulatory agencies agreed that no further action is required.

8. Building P-11 - Visited Building P-11, located between Buildings 97 and 99. Outside the southeast corner, a 1-foot by 1-foot open drain in the asphalt pavement was observed. Its function and discharge location were unknown. Regulatory agencies recommended one sampling location adjacent to the drain.

9. Warehouse A - Walked through most of Warehouse A. Mr. Johnson stated that Warehouse A was typically used for storing refurbished and new diesel engines for the past 15 to 20 years. A 3-foot by 10-foot by 2-foot deep sump in the floor was observed inside the eastern portion of Warehouse A. Its use or discharge location were unknown. Regulatory agencies recommended one sampling location adjacent to the drain.

10. Warehouse B - Walked throughout the inside of Warehouse B. Regulatory agencies agreed that no further action is required.

11. Building 50 - Visited on 21 October 1998, Building 50 contains wood block floors in three areas. The regulatory agencies agreed that one sample from a heavily stained area should be sampled to characterize the wood blocks for disposal purposes.

12. Building 311 - Visited this former Less-Than-90-Day Hazardous Waste Storage Facility located west of Building 210. It is already being investigated as one of the 182 Group

B AOCs. Regulatory agencies agreed that no sampling is required. As discussed in a meeting on 11 May 1998, it is recommended for no further action.

13. Temporary Building #2 - Visited on 21 October 1998, Temporary Building #2 contains a storm drain catch basin and some surface staining. The exact use of this building and the materials/wastes used are unknown.

14. Temporary Building #3 - Visited on 21 October 1998, Temporary Building #3 contains both a central berm and asphalt curbs that may have been used to segregate any spills. The exact use of this building and the materials/wastes used are unknown.

15. Building 101 - Inadvertently not visited. Must revisit at a future time.

SUBJECT: Site Walk for Identification of New Areas of Concern (AOCs)

MEETING DATE: 20 January 1999

ACTIVITY: Long Beach Naval Shipyard (LBNSY) AOCs Investigation

ATTENDEES: Alvaro Gutierrez (DTSC)
Martin Hausladen (U.S. EPA Region IX)
Hugh Marley (RWQCB)
Duane Rollefson (SWDIV)
Ed Nunn (LBNSY)
Dave Bjostad (CDM Federal)
Brendan Boyd (CDM Federal)

PURPOSE:

This meeting was held to identify additional buildings that might need some type of assessment or investigation. Ron Johnson had generated a list of 26 potential new AOCs on 8 December 1998.

DISCUSSION:

The list of 26 potential new AOCs from Ron Johnson was discussed from 0830 to 0900. A 27th site was also discussed, based on identification of a portion of concrete floor crumbling in Building 121. A summary of the actions agreed upon is included as Table A (attached). Certain sites required visits, as discussed below, prior to agreeing upon whether they were new AOCs or not.

1. Building 173 - Visited the sandblast pit/conveyor system located north of Building 132. No sampling was agreed upon because only new, unused sandblast grit was placed into the lined pit. For documentation purposes, a PA will be performed, and the AOC will be included as part of the Group B AOCs PA Report due in Summer 1999.

2. Building 132 - Visited the sub-level utility tunnels located in the central portion of Building 132. According to former LBNSY employee Ed Nunn, the tunnels were reportedly used for non-hazardous materials storage. Approximately two-foot deep water was observed in the bottom of the tunnels. The water was reportedly due to salt water intrusion. No Further Action was agreed upon for the tunnels.

3. Building 132 - Observed the Building 132 second floor Plating Shop discharge pipes that run along the ceiling of Building 132. The discharge pipes are addressed as AOC IWS 1.

4. Building 132 - Inspected the rosin pot and discussed the associated discharge pipelines located in the Building 132 Pipe and Copper Shop. The pipelines discharged into an oil/water separator that is addressed as AOC IWS 5.

5. Drydocks 1, 2, and 3 - Observed the mercury manometers located in the utility tunnel of Drydock 3. It was agreed that the mercury manometers would be documented in the Group B AOCs Report as AOC ADD 11. It was also agreed that no investigational sampling would be necessary partly due to safety concerns of sampling at the bottom of the 60-foot deep shafts below the manometers.

6. Drydocks 1, 2, and 3 - Observed the access tunnels to the Drydock 1 sanitary sewer holding pit located at the low point of the drydock. No Further Action was agreed upon due to the potential dangers of collecting a sample at the bottom of the 60-foot deep shaft. The sewer holding pits, located below the water table, may be subject to more groundwater infiltration than leaks out of the pit.

7. Building 197 - Visited the former mercury gage repair area located in the northwestern corner of Building 197. No evidence of the former operation was observed. It was agreed that the area would be addressed in the Group B AOCs Report as AOC ADD 12. Further action was agreed to be dependent upon the results of a record search; if any former sumps or pits were located in the vicinity of the mercury gage repair area, investigational sampling would be performed. *Subsequent records search indicates that a floor drain was located inside the northwestern corner of Building 197, so sampling should be performed.*

8. Building 104 - Visited the mercury-sealed pump motor stand area located south of Building 104. It was agreed that the mercury-sealed pump stand area will be addressed in the Group B AOCs Report (AOC ADD 13) and that investigational sampling will be necessary based upon the potential for mercury contamination. One sediment sample will be collected from the bermed area surrounding the pump stand area, and one sediment sample will be collected from the spill pan located directly beneath the pump stand. The samples will be analyzed for mercury.

9. Building 150 - It was agreed that the mercury-sealed motor pump stand area south of Building 150 will be addressed in the Group B AOCs Report (AOC ADD 14) and that investigational sampling will be necessary based upon the potential for mercury contamination. One sediment sample will be collected from the bermed area surrounding the pump stand area, and one sediment sample will be collected from the spill pan located directly beneath the pump stand. The samples will be analyzed for mercury.

Table A lists each of the potential AOCs described by former LBNSY employee Ron Johnson and decided action as agreed upon by the regulatory agencies and the Navy.

Table A

Potential New AOCs Identified by Ron Johnson, Decided Actions Agreed Upon by Regulatory Agencies (20 January 1999)

Bldg No.	AOC	Description	Decided Action
300	Emergency Diesel Fuel Generator	Approx. 500 gallons, diesel fuel, in place, north of security fence.	Not a UST, AST will be transferred with emergency generator to POLB.
173	Sandblast pit/conveyor system	Contained sandblast grit, at end of train tracks. Received new grit only.	New AOC ADD 10; no sampling required
210	Plating Shop ventilation ducts	Beneath shop, already addressed.	Addressed as part of AOC PT 1
132	Utility tunnels	Center of building, stored miscellaneous supplies but no hazardous materials.	No Further Action
132	2nd floor plating/valve cleaning drain pipes.	Sodium hydroxide passed through pipelines above first floor.	Addressed as part of AOC IWS 1
132	Rosin waste drain line in Pipe and Copper Shop	Drains to AOC IWS 5 clarifier. Drain line in Building 132 East.	Addressed as part of AOC IWS 5
132	Pipe and Copper Shop fume scrubbers, line	Soil and groundwater addressed by AOC PT 4.	No Further Action
132	UST for Prop & Shaft Shop	Less than 180 gallons, contained waste products from Prop & Shaft Shop.	Will be addressed as part of the UST Compliance Program
	Asbestos-insulated pipes	Pipe insulation in underground utility systems.	Will be addressed by POLB demolition
	Utility pipe systems, cathodic protection	Manganese in bags associated with underground utility systems.	Will be addressed by POLB demolition
	Lead-lined conductors	Associated with underground electrical utility system.	Will be addressed by POLB demolition
	Mercury manometers	Sewer and storm water lift pump stations, manometers at electrical switching stations. Storm water sampled previously.	New AOC ADD 11; no sampling required
	Drydock sewer lines and holding tanks	North end of each Drydock.	No Further Action required
	Finger Pier 6	Diesel fuel piping on pier gangway.	No Further Action required
202	UST paint bays	AOC UST 4	Addressed as AOC UST 4

Table A

Potential New AOCs Identified by Ron Johnson, Decided Actions Agreed Upon by Regulatory Agencies (20 January 1999)

Bldg No.	AOC	Description	Decided Action
217	UST	Hydrostatic pressure testing vessel, used ethylene glycol, 16 feet deep.	Will be addressed as part of the UST Compliance Program.
129	Catalytic Afterburner	On roof above diesel engine test cells.	Will be addressed by POLB demolition
5	Hydraulic Elevator System (NAVSTA)	Oil stains on walls and floor.	Will be addressed by POLB demolition
205	Steam Cleaning UST	Oil/water separator east of Building 205.	Will be addressed as part of the UST Compliance Program
197	Gage Test Facility, Temporary Homeless Shelter	Mercury gage repair area, northwestern corner.	New AOC ADD 12; sampling required
303	Clarifier	West side of building, wastes from plastics and paint shop, large size.	Will be addressed as part of the UST Compliance Program
128	TCE dip tanks and condensers	North end, west side. Sampled sump liquid in June 1998 for AOCs investigation.	Clarifier south of existing tanks will be addressed as part of the UST Compliance Program
128	Pit (UST) east of quench tanks	Quench tanks addressed as AOC PT 10, sampled June 1998. No other pit/UST located except for Furnace foundation pit east of quench tanks.	No Further Action required
104	Mercury sealed motor pump stand area	Bermed secondary concrete containment area. Possible mercury spills when disassembling pumps.	New AOC ADD 13; sampling required
150	Mercury sealed motor pump stand area	Bermed secondary concrete containment area. Possible mercury spills when disassembling pumps.	New AOC ADD 14; sampling required
129	Metal Plating Shop	Addressed as AOC PT 2. Many soil and groundwater samples north of Building 129 as part of IR Site 9.	Will be addressed as AOC PT 2
121	Concrete floor	Concrete floor crumbling, white powder residue in floor cracks.	No Further Action required

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 27, 1999

Mr. Duane Rollefson
Remedial Project Manager
Southwest Division
Naval Facilities Engineering Command
Code 56LB.DR
1220 Pacific Highway
San Diego, CA92132-5180

CONCURRENCE on: DRAFT ADDENDUM SAMPLING REPORT TO SAMPLING REPORT FOR NINE GROUP B AREAS OF CONCERN, LBNSY
RESAMPLING FOR BEPH AT THE BUILDING 54 TRANSPORTATION YARD FOR THE AOC PA
DRAFT PA SAMPLING REPORT FOR THE 171 GROUP B AOC, LBNSY

Dear Mr. Rollefson:

The United States Environmental Protection Agency(USEPA) has reviewed the above referenced documents and find that our concerns and comments have been adequately addressed. We therefore have no further comments and accept the documents as written.

We appreciate the opportunity to work with you on these projects and look forward to successful completion of our work at the LBNC. If you have questions regarding this letter, please feel free to contact me at (415)744-2388 at any time.

Sincerely,

Martin M. Hausladen, RPM

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

5090.4
Ser 05BN.DR/0677
September 30, 1999

Mr. Aaron Yue
California Environmental Protection Agency
Department of Toxic Substances Control
5796 Corporate Way
Cypress, CA 90630

Dear Mr. Yue:

Enclosure (1) is a proposed change to the recommendation of the "Draft Preliminary Assessment (PA) Sampling Report for the 171 Group B Areas of Concern (AOC), Long Beach Naval Shipyard, Long Beach, California" issued July 27, 1999. AOC MISC 8 was originally recommended for further action in the form of additional characterization because of the detection of bis(2-ethylhexyl)\phthalate (BEHP) above screening level during the February 1999 sampling event. Because BEHP is a typical laboratory contaminate and there is no historical information to indicate the potential for BEHP contamination at this site, a re-sampling effort (approved by the regulatory agencies) was performed on August 19, 1999, to confirm the existence or non-existence of BEHP. Based on the groundwater sampling results described in enclosure (1), the recommended action for AOC MISC 8 is changed to no further action. Request you consider this proposed change as part of your review of the subject Draft PA Report.

For questions or concerns regarding this matter, please contact Mr. Duane Rollefson at (619) 532-4712.

Sincerely,

FAIQ ALJABI
Environmental Engineer
By direction of the Commander

Encl: (1) CDM Federal Programs Corporation letter, Subject: Contract No. N68711-96-D-2029, Delivery Order No. 014. Indefinite Quantity Contract for Hazardous Waste at Various Southwest Division Locations in California, Nevada, Arizona, and New Mexico. Group B Areas of Concern (AOC) Investigation, Long Beach Naval Shipyard, Long Beach, CA. Resampling Activities and Results, Building 54 Transportation Yard, of September 14, 1999.

Enclosure 1

CDM Federal Programs Corporation
A Subsidiary of Camp Dresser & McKee Inc.

consulting
engineering
construction
operations

3760 Convoy Street
Suite 210
San Diego, CA 92111
Tel: (619) 268-3383 Fax: (619) 268-9677

September 14, 1999
DOC. No. 5109

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132

Subject: Contract No. N68711-96-D-2029, Delivery Order No. 014
Indefinite Quantity Contract for Hazardous Waste at Various Southwest Division Locations in California, Nevada, Arizona, and New Mexico
Group B Areas of Concern (AOCs) Investigation
Long Beach Naval Shipyard, Long Beach, CA
Resampling Activities and Results, Building 54 Transportation Yard

Dear Mr. Rollefson:

CDM Federal Performed groundwater resampling activities at the Transportation Yard at Building 54 on 23 August 1999. Resampling was performed at one location as agreed with the regulatory agencies on 19 August 1999. This resampling effort was performed to confirm the detection of bis(2-ethylhexyl)phthalate (BEHP) in groundwater at a concentration of 0.088 milligrams per liter (mg/L) in February 1999 at sampling location MI8e (next to a paved-over sump). The result of 0.088 mg/L was above the Ocean Plan screening criteria of 0.0035 mg/L and above the common laboratory contamination level of 0.010 to 0.020 mg/L.

Activities and Results

CDM Federal and our subcontractor Transglobal Environmental Geochemistry (TEG) resampled groundwater south of Building 54 on the morning of 23 August 1999. Ms. Ana Veloz-Townsend from the Regional Water Quality Control Board (RWQCB) was present during resampling activities. Foster Wheeler had removed the sump in this area on 2 August 1999, leaving an open excavation pit. CDM Federal selected a sampling location at the edge of the pit, about 10 feet from the previous sampling location MI8e. Ms. Veloz-Townsend approved this sampling location.

Two groundwater samples were collected at this location. (Please see attached results.) One was collected using a stainless steel bailer (sample ID 99SY-M8eb-W-10.5), which avoided using tubing that was considered a possible source of BEHP. The analytical results (EPA Method 8270 for phthalates) showed detections of 0.0029 mg/L BEHP and 0.0152 mg/L dibutyl phthalate.

The second groundwater sample (sample ID 99SY-M8ea-W-10.5) was collected as in February 1999 using polyethylene tubing, along with silicone and Tygon connector tubing. The results for this sample showed detections of 0.016 mg/L BEHP and 0.0037 dibutyl phthalate.

The laboratory blank sample showed a detection of 2.1 mg/L dibutyl phthalate. Although the laboratory blank sample did not indicate the presence of BEHP, the laboratory director stated that other blank samples on recent days showed BEHP detections.

Conclusions

The sample results of 0.0029 and 0.016 mg/L BEHP in the two samples did not confirm the previously-reported concentration of 0.088 mg/L. In fact, they were more than five times lower.

In addition, at this site and other Areas of Concern addressed in the Draft Preliminary Assessment/Sampling Report for 171 Group B AOCs Report (dated 26 July 1999), concentrations of up to 0.020 mg/L were attributed to possible laboratory contamination. The fact that dibutyl phthalate was reported in the laboratory blank sample and that BEHP was reported in other blank samples on recent days suggests that laboratory contamination may have occurred and may have been the cause for BEHP reported in groundwater samples.

Recommendations

Based on the results presented above, CDM Federal recommends that No Further Action be required at the Transportation Yard at Building 54 (AOC MISC 8).

CDM Federal will incorporate the information above into the Final Report upon concurrence from the regulatory agencies.

If you have any questions, please call me at (858) 268-3383.

Sincerely,

Larry Davidson

Larry Davidson, P.E.
Project Manager

CDM FEDERAL PROGRAMS CORPORATION

c: M. Orpilla (SWDIV)
D. Bjostad
B. Boyd
M. Smits
G. DeLullo
File

MOBILE/one LABORATORIES INC.

Report Summary

Client: CDM Federal
Project: LBNSY AOCs

Matrix: water
Units - ug/L

Method =	<----------8270---------->	
Analyte =	dibutyl phthalate	bis(2-ethylhexyl) phthalate
Detection Limit -	1	1
SAMPLE I.D.		
Date Analyzed: 9/2/99		
Method blank	2.1	nd
99SY-M8ea-W-10.5	3.7	16
99SY-M8eb-W-10.5	15.2	2.9

Footnotes:
nd = Not found above the detection limit.

Analyses performed by: S. Kuhn/J. Picker
CD082399

California Regional Water Quality Control Board
Los Angeles Region

W[illegible]n H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

October 7, 1999

Commander
Attn: Mr. Duane Rollefson (Code 05BN.DR)
Southwest Division, Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

RESAMPLING ACTIVITIES AND RESULTS, BUILDING 54 TRANSPORTATION YARD (AOC MISC 8), GROUP B AREAS OF CONCERN - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE No. 90-75)

Dear Mr. Rollefson:

We have received and reviewed the Navy's letter dated September 30, 1999, proposing a change to the recommendation in the "Draft Preliminary Assessment (PA) Sampling Report for the 171 Group B Areas of Concern (AOC), Long Beach Naval Shipyard, Long Beach, California" dated July 27, 1999. The letter proposes to change the recommended action for the Transportation Yard at Building 54 (AOC MISC 8) to no further action, based on the results from the re-sampling effort completed on August 24, 1999. Two groundwater samples were collected, one using a stainless steel bailer and one using polyethylene tubing. The two samples collected during the re-sampling activities did not confirm the previously reported concentration (0.088 mg/L) of bis(2-ethylhexy)phthalate (BEHP). Based on the information submitted to date, you are authorized to revise the Final PA report to include the no further action recommendation proposed for the AOC MISC 8 site.

If you have any questions regarding the above, please contact me at (213) 576-6738.

Sincerely,

ANA M. TOWNSEND
Sanitary Engineer Associate
Site Cleanup Unit

cc: Martin Hausladen, Environmental Protection Agency
Aaron Yue, Department of Toxic Substances Control
Alan Lee, Southwest Division, Naval Facilities Engineering Command

California Regional Water Quality Control Board
Los Angeles Region

Winston H. Hickox
Secretary for
Environmental
Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

November 8, 1999

Commander
Southwest Division, Naval Facilities Engineering Command
Code 05BN.DR (Mr. Duane Rollefson)
1220 Pacific Highway
San Diego, CA 92132-5190

DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT, 171 GROUP B AREAS OF CONCERN, FORMER LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE No. 90-75)

Dear Mr. Rollefson:

We have received and reviewed the Navy's *Draft Preliminary Assessment/Sampling Report, 171 Group B Areas of Concern, Long Beach Naval Shipyard, Long Beach, California,* dated July 26, 1999. Our comments are as follows;

1. Please update the report, text and tables, to reflect the no further action (NFA) status of the Transportation Yard Associated with Building 54 (AOC MISC 8). NFA was issued for this site in October 1999.

2. Please update Figure ES-1, Figure 2-1 and Figure 5-1 to reflect the NFA status of the 2 AOC sites described in the Draft Addendum report dated August 19, 1999.

3. Figure ES-1 and Figure 5-1 appear to be the same figure, however, Figure ES-1 indicates that no further action is recommended at 126 sites and Figure 5-1 indicates that no further action is recommended at 125 sites. Please verify which figure provides the correct information and update the final report accordingly.

4. On Pages 2-3 and 2-6, the report indicates that shallow groundwater underlying the LBNSY is no longer designated by the Los Angeles (LA) Regional Water Quality Control Board (RWQCB) as a potable water source. Please revise this statement to reflect the following: the Navy has proposed and the RWQCB has agreed, that because the groundwater at the Long Beach Naval Complex meets one of the exceptions in State of California Water Resources Control Board Resolution 88-63, it is not potentially suitable as a source of drinking water and it is unnecessary to remediate the groundwater to protect the beneficial use of municipal or domestic supply. Therefore the RWQCB has determined that the California Ocean Plan is the more appropriate groundwater screening criteria for this site.

5. Figure 4.26-1, the map of the entire sanitary sewer system, is missing from Section 4.26 in the draft document. Please update the final report accordingly.

6. AOC SSS 4 is located on Figure 1-3, Grid No. C-33 not F-31 as indicated on Table 4.28-1, in Section 4.28.1 of the report. Please update the table to reflect the correct location of this AOC.

7. Section 4.39; the lead concentration detected in the soil sample collected near IR site 11 was above the screening criteria and does not appear to be related to the former and current oil production activities but rather the IR Site 11 activities. The lead contaminated soil needs to be addressed, either under the IR Program or separately. Please revise the recommendations in this section accordingly.

8. AOC IWS 4 is located on Figure 1-3, Grid No. F-34 not E-34 as indicated on Table 4.49-1, in Section 4.49.1 of the report. Please update the table to reflect the correct location of this AOC.

9. An NFA letter was issued for USTs 129.8 and 129.9 on October 7, 1999. Please update Section 4.58 of the document, including the text and tables in this section to reflect this NFA status.

10. Section 4.58.2, indicates that UST 129.5 is schedule for removal in Summer 1999. Please clarify if this UST has been issued a closure letter or if it will be completed under the compliance program. Revise the recommendations in Section 4.58.9 to reflect the status of the UST removal.

11. Section 4.188; arsenic was detected at more than twice the Ocean Plan screening criteria in the groundwater sample collected near the floor drain at Building P-11 (AOC ADD 6). AOC ADD 6 is located approximately 500 feet from the Harbor. Based on the location of this site and since only one sample was collected in this area, the extent of this arsenic contamination in the groundwater needs to be defined. Additional groundwater samples need to be collected in order to verify if an arsenic contamination plume exist in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.

12. Figure 4.188-4, the map of the sampling location and results, is missing from Section 4.188 in the draft document. Please include this figure in the final report.

13. Section 4.189; arsenic was detected at almost triple the Ocean Plan screening criteria in the groundwater sample collected near the sump at Warehouse A (AOC ADD 7). AOC ADD 7 is located approximately 100 feet from the Harbor. Based on the location of this site and since only one sample was collected in this area, the extent of this arsenic contamination in the groundwater needs to be defined. Additional groundwater samples need to be collected in order to verify if an arsenic contamination plume exist in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.

14. Section 4.194; mercury was detected in all three groundwater samples collected at the Mercury Gage Repair Area, Building 197 (AOC ADD 12), at 3 to 4 times the Ocean Plan screening criteria. Since all the groundwater samples collected in this area contained elevated levels of mercury, the extent of the mercury contamination in the groundwater needs to be defined. Therefore, additional groundwater samples need to be collected in order to delineate the mercury plume or to determine whether these levels of mercury are the background levels in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.

If you have any questions regarding the above, please contact me at (213) 576-6738.

Sincerely,

ANA TOWNSEND
Sanitary Engineer Associate
Site Cleanup Unit

cc: Martin Hausladen, Environmental Protection Agency
Jennifer Rich, Department of Toxic Substances Control
Thomas Macchiarella, Southwest Division, Naval Facilities Engineering Command

Department of Toxic Substances Control

Edwin F. Lowry, Director
5796 Corporate Avenue
Cypress, California 90630

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

November 15, 1999

Mr. Duane Rollefson
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, California 92132-5190

DRAFT PRELIMINARY ASSESSMENT - SAMPLING REPORT FOR 171 AREAS OF CONCERN FOR THE FORMER LONG BEACH NAVAL SHIPYARD

Dear Mr. Rollefson:

The Department of Toxic Substances Control (DTSC) has completed the review of the July 27, 1999 draft Preliminary Assessment - Sampling Report for the 171 Group B Areas of Concern (AOCs) for the Long Beach Naval Shipyard. In general, DTSC agrees with the findings and conclusions of the sampling report; however, we have several comments related to the conclusions of the report. These comments are provided below.

1. Section 4.40.2, Page 4.40-2:

   Typographical error. The last sentence of this page is repeated on the next page.

2. Section 4.53.9, Recommendations:

   Although there is no current risk to human health and the environment from the wood block floors due to ceased operation at this facility, the Navy does acknowledge that the floor could be considered a hazardous waste when disposed of. DTSC is concerned that proper notification must be provided to the future land owner (Port of Long Beach) and its contractors before the facility is razed or deconstructed. As a generator of potential hazardous waste, the Navy has the responsibility to ensure that it is ultimately properly handled. Although the Navy has concluded that no further investigation is needed at this facility, the Navy should not automatically conclude that it is "No Further Action." DTSC

requests that the Navy provide, in this report, a reporting mechanism that the Port of Long Beach would have to follow to assure DTSC and the Navy that the potentially hazardous wastes will be handled in appropriate manner and in accordance with applicable state and federal regulations.

DTSC notes that there are numerous AOCs with situations that are similar to the wood block floors at Building 128. DTSC requests that the Navy append the report as recommended above for all the applicable AOCs.

3. Table 4.54-6, Page 4.54-6:

Please explain why the regulatory threshold levels have been changed from those cited in Table 4.53-10 (e.g. Beryllium, Selenium, and Thallium)?

4. Section 4.194.9, Page 4.194-3:

The recommendation for this section is "No Further Action." However, the dissolved concentration of Mercury for all three samples exceeded the screening criteria for water, although not the background level. DTSC will defer the decision on the necessity for additional action to the Regional Water Quality Control Board. The Navy should confer with the Water Board for a resolution on this AOC.

5. Table 5-1, Conclusions and Recommendations:

For AOCs that have been proposed for "No Further Action" under the CERCLA process, but will be managed or studied under a separate program of the Navy - e.g., compliance program for gas station and underground storage tank removals, DTSC requests that the Navy specifically include this information in the recommendations column of Table 5-1. This will provide a concise summary of all the future work needed for the AOCs. This recommendation also applies to closures under RCRA, the California Tiered Permitting program, and Certified Unified Program Agencies (CUPAs).

6. General:

DTSC notes that the conclusions and recommendations of the draft Preliminary Assessment - Sampling Report are based, in great extent, on the U.S. EPA Region 9 - Industrial Preliminary Remediation Goals. Despite the Navy's arguments used in Section 2.4 of the report for the assessment of potential contaminant pathways, DTSC believes that the Navy should evaluate the AOCs against both residential and industrial PRGs, as advised under Section 1.0,

Introduction, of the *EPA Region 9: Preliminary Remediation Goals Guidance*. Unless a non-restricted future land use scenario has been evaluated, the Navy cannot determine that the risks associated with an improbable change in land use are acceptable. Therefore, the Navy may need to deed restrict all the AOCs for industrial use only. This could be problematic in procedure since Institutional Controls are considered a remedy. The Navy may, therefore, need to complete a No Further Action ROD with Institutional Controls and enter into a Land Use Covenant with DTSC prior to disposal of the Long Beach Naval Shipyard.

DTSC requests that the Navy evaluate the above comments and provide a written response to us for evaluation. If you have any questions regarding this letter, please contact Ms. Sue Hakim at (714) 484-5381.

Sincerely,

Sharon Fair, Chief
Base Closure and Reuse Unit
Office of Military Facilities

cc: Ms. Anna Veloz-Townsend
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Mr.Thomas Macchiarella
Code 05BN.TM
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

cc: Mr. John Hill
Code 05BN.JH
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Room 18
San Diego, California 92132-5181

Mr. Tom Johnson
Manager of Environmental Planning
Port of Long Beach
P.O. Box 570
Long Beach, California 90801

RESPONSE TO AGENCY COMMENTS
ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

Comments from Department of Toxic Substances Control (DTSC) - dated 15 November 1999

		DTSC COMMENTS	NAVY/CDM FEDERAL RESPONSE
Specific	1.	Section 4.40.2, Page 4.40-2. Typographical error. The last sentence of this page is repeated on the next page.	Concur. The repeated sentence has been removed.
Specific	2.	Section 4.53.9, Recommendations. Although there is no current risk to human health and the environment from the wood block floors due to the ceased operation at this facility, the Navy does acknowledge that the floor could be considered a hazardous waste when disposed of. DTSC is concerned that proper notification must be provided to the future land owner (Port Long Beach) and its contractors before the facility is razed or deconstructed. As a generator of potential hazardous waste, the Navy has the responsibility to ensure that it is ultimately properly handled. Although the Navy has concluded that no further investigation is needed at the facility, the Navy should not automatically conclude that it is "No Further Action." DTSC requests the Navy provide, in this report, a reporting mechanism that the Port of Long Beach would have to follow to assure DTSC and the Navy that the potentially hazardous wastes will be handled in appropriate manner and in accordance with the applicable state and federal regulations. DTSC notes that there are numerous AOCs with situations that are similar to the wood block floors at Building 128. DTSC requests that the Navy append the report as recommended above for applicable AOCs.	The Lease in Furtherance of Conveyance (LIFOC) signed by the City of Long Beach Harbor Department requires the lessee to comply with all applicable environmental laws and regulations that are or may become applicable to the lessees activities. The lessee is responsible for obtaining any environmental permits for construction and operation. The lessee is also responsible for obtaining its own U.S. EPA identification number which shall identify them as the generator and be used in preparation of hazardous waste manifests for the removal and transportation of wastes generated by the lessee. Upon lifting the access and use restrictions on the No Further Action AOCs under the terms of the LIFOC, the Navy will notify the lessee that the wood block floors may potentially be a hazardous waste when disposed. The lessee shall comply with the terms of the LIFOC. (This applies to AOCs MISC 1, MISC 2, MISC 4, MISC 5, PT 1, PT 10, ADD 3, ADD 6, ADD 13, and ADD 14. The first three sentences of the response above

RESPONSE TO AGENCY COMMENTS
ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

		DTSC COMMENTS	NAVY/CDM FEDERAL RESPONSE
			have been added to the section for each applicable AOC.).
Specific	3.	Table 4.54-6, Page 4.54-6. Please explain why the regulatory threshold levels have been changed from those cited in Table 4.53-10 (e.g., beryllium, selenium, and thallium)?	"N/A" listed in Table 4.54-6 for beryllium, selenium, and thallium have been corrected to match those of Table 4.53-10 and Table 3-4.
Specific	4.	Section 4.194.9, Page 4.194-3. The recommendation for this section is "No Further Action." However, the dissolved concentration of mercury for all three samples exceeded screening criteria for water, although not the background level. DTSC will defer the decision on the necessity of additional action to the Regional Water Quality Control Board. The Navy should confer with the Water Board for a resolution on this AOC.	See response to RWQCB comment numbers 11 and 14.
Specific	5.	Table 5-1, Conclusions and Recommendations. For AOCs that have been proposed for "No Further Action" under the CERCLA process, but will be managed or studied under a separate program of the Navy - e.g., compliance program for gas station and underground storage tank removals, DTSC requests the Navy specifically include this information in the recommendations column of Table 5-1. This will provide a concise summary of all the future work needed for the AOCs. This recommendation also applies to closures under the RCRA, the California Tiered Permitting program, and Certified Unified Program Agencies (CUPAs).	Incorporated in Table 5-1.
General	6.	DTSC notes that the conclusions and recommendations of the draft Preliminary Assessment - Sampling Report are based, in great extent, on the U.S. EPA Region 9 - Industrial Preliminary Remediation Goals. Despite the Navy's arguments used in Section 2.4 of the report for the	All soil sample results have now been compared to residential PRGs. At six AOCs (AOC HIST 1, AOC MISC 1, AOC MISC 5, AOC PT 10, AOC ADD 13, and AOC ADD 14), certain

		DTSC COMMENTS	NAVY/CDM FEDERAL RESPONSE
		assessment of potential contaminant pathways, DTSC believes that the Navy should evaluate the AOCs against both the residential and industrial PRGs, as advised under Section 1.0, Introduction, of the EPA Region 9: Preliminary Remediation Goals Guidance. Unless a non-restricted future land use scenario has been evaluated, the Navy cannot determine that the risks associated with an improbable change in land use are acceptable. Therefore, the Navy may need to deed restrict all the AOCs for industrial use only. This could be problematic in procedure since Institutional Controls are considered a remedy. The Navy may, therefore, need to complete a No Further Action ROD with Institutional Controls and enter into a Land Use Covenant with DTSC prior to disposal of the Long Beach Naval Shipyard.	analytes exceed residential PRGs but not industrial PRGs. However, at all six of these AOCs, another sample or other analytes already exceeded industrial PRGs, so these six AOCs were already recommended for further action (five AOCs) or are the responsibility of the City of Long Beach (AOC HIST 1, the Oil Production Areas). Therefore, comparison of soil sample results to residential PRGs has not changed recommendations for any AOCs. However, the exceedances of residential PRGs at these six AOCs has been added to the text in Section 4 for each respective AOC.

RESPONSE TO AGENCY COMMENTS
ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

Comments from Regional Water Quality Control Board (RWQCB) - dated 8 November 1999

	RWQCB COMMENTS	NAVY/CDM FEDERAL RESPONSE
1.	Please update the report, text and tables, to reflect the no further action (NFA) status of the Transportation Yard Associated with Building 54 (AOC MISC 8). NFA was issued for this site in October 1999.	The report, tables, and text have been changed to reflect the NFA status of the Transportation Yard Associated with Building 54 (AOC MISC 8).
2.	Please update Figure ES-1, Figure 2-1 and Figure 5-1 to reflect the NFA status of the 2 AOC sites described in the Draft Addendum report dated August 19, 1999.	The two AOCs (Sanitary Sewer System [SSS 1] and Stormwater System [SWS 2]) described in the Draft Addendum report dated August 19,1999 are not addressed as part of the 171 AOCs in this report. Rather, they were part of the expedited 25 AOCs study and the NFA status was incorporated into the Final Addendum Report for Nine Group B AOCs, dated October 26, 1999.
3.	Figure ES-1 and Figure 5-1 appear to be the same figure, however, Figure ES-1 indicates that no further action is recommended at 126 sites and Figure 5-1 indicates that no further action is recommended at 125 sites. Please verify which figure provides the correct information and update the final report accordingly.	Figure 5-1 has been changed to 126 AOCs for NFA after the PA was completed.
4.	On Pages 2-3 and 2-6, the report indicates that shallow groundwater underlying the LBNSY is no longer designated by the Los Angeles (LA) Regional Water Quality Control Board (RWQCB) as a potable water source. Please revise this statement to reflect the following: "The Navy has proposed and the RWQCB has agreed, that because the groundwater at the Long Beach Naval Complex meets one of the exceptions in State of California Water Resources Control Board Resolution 88-63, it is not potentially suitable as a source of	Edited as requested by inserting the portion of the comment in quotes.

	RWQCB COMMENTS	NAVY/CDM FEDERAL RESPONSE
	drinking water and it is unnecessary to remediate the groundwater to protect the beneficial use of municipal or domestic supply. Therefore the RWQCB has determined that the California Ocean Plan is the more appropriate groundwater screening criteria for this site."	
5.	Figure 4.26-1, the map of the entire sanitary sewer system, is missing from Section 4.26 in the draft document. Please update the final report accordingly.	Included in Final Report.
6.	AOC SSS 4 is located on Figure 1-3, Grid No. C-33 not F-31 as indicated on Table 4.28-1, in Section 4.28.1 of the report. Please update the table to reflect the correct location of this AOC.	The correct grid number is C-33, so Table 4.28-1 has been corrected accordingly.
7.	Section 4.39; the lead concentration detected in the soil sample collected near IR site 11 was above the screening criteria and does not appear to be related to the former and current oil production activities but rather the IR Site 11 activities. The lead contaminated soil needs to be addressed, either under the IR Program or separately. Please revise the recommendations in this section accordingly.	Concur that the lead does not appear to be from oil production activities. Lead was detected in one IR Site 12/13 soil sample in 1996 (approximately 300 feet away from sampling location HI1g sampled under the AOCs Investigation) (BNI 1997a). Section 6.5.1.4 of the RI Report concluded that lead up to 4,200 mg/kg was considered "safe," based on a human health risk assessment. Because the AOC sample result of 1,820 mg/kg did not exceed this calculated "safe" concentration of 4,200 mg/kg, and the same receptor scenarios apply, no further action is still recommended. This discussion has been added to Section 4.39.7.
8.	AOC IWS 4 is located on Figure 1-3, Grid No. F-34 not E-34 as	The correct grid number is F-34, so Table 4.49-1 has

RESPONSE TO AGENCY COMMENTS
ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

	RWQCB COMMENTS	NAVY/CDM FEDERAL RESPONSE
	indicated on Table 4.49-1, in Section 4.49.1 of the report. Please update the table to reflect the correct location of this AOC.	been corrected accordingly.
9.	An NFA letter was issued for USTs 129.8 and 129.9 on October 7, 1999. Please update Section 4.58 of the document, including the text and tables in this section to reflect this NFA status.	Section 4.58 has been updated to reflect that fact that USTs 129.8 and 129.9 have been removed. The RWQCB NFA letter dated 7 October 1999 has been included in Appendix F.
10.	Section 4.58.2, indicates that UST 129.5 is scheduled for removal in Summer 1999. Please clarify if this UST has been issued a closure letter or if it will be completed under the compliance program. Revise the recommendations in Section 4.58.9 to reflect the status of the UST removal.	Section 4.58 has been updated to reflect the fact that UST 129.5 has been removed. A final closure report will be issued in the coming months.
11.	Section 4.188; arsenic was detected at more than twice the Ocean Plan screening criteria in the groundwater sample collected near the floor drain at Building P-11 (AOC ADD 6). AOC ADD 6 is located approximately 500 feet from the Harbor. Based on the location of this site and since only one sample was collected in this area, the extent of this arsenic contamination in the groundwater needs to be defined. Additional groundwater samples need to be collected in order to verify if an arsenic contamination plume exist in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.	This sample result (0.021 mg/L) did not exceed the background level of 0.0276 mg/L. The previously-approved RI Report also used the approach that results below background levels (reproduced in Appendix L of this report) do not require further action (see Section 3.2, Appendix E, and Appendix F in BNI 1997a). The reason for this is that "metals occur naturally; therefore, it is necessary to differentiate between naturally occurring (background) concentrations, and concentrations indicative of contamination related to operations at LBNSY" (Section 3.2 in BNI 1997a).
12.	Figure 4.188-4, the map of the sampling location and results, is missing from Section 4.188 in the draft document. Please include	Figure 4.188-4 has been included in the Final Report.

	RWQCB COMMENTS	NAVY/CDM FEDERAL RESPONSE
	this figure in the final report.	
13.	Section 4.189; arsenic was detected at almost triple the Ocean Plan screening criteria in the groundwater sample collected near the sump at Warehouse A (AOC ADD 7). AOC ADD 7 is located approximately 100 feet from the Harbor. Based on the location of this site and since only one sample was collected in this area, the extent of this arsenic contamination in the groundwater needs to be defined. Additional groundwater samples need to be collected in order to verify if an arsenic contamination plume exist in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.	See response to Comment number 11 above. This sample result (0.023 mg/L) did not exceed the background level of 0.0276 mg/L.
14.	Section 4.194; mercury was detected in all three groundwater samples collected at the Mercury Gage Repair Area, Building 197 (AOC ADD 12), at 3 to 4 times the Ocean Plan screening criteria. Since all the groundwater samples collected in this area contained elevated levels of mercury, the extent of the mercury contamination in the groundwater needs to be defined. Therefore, additional groundwater samples need to be collected in order to delineate the mercury plume or to determine whether these levels of mercury are the background levels in this area. Please revise the recommendation and other sections in the document to reflect further action for this AOC.	See response to Comment number 11 above. Mercury was detected in site samples at 0.00015, 0.00013, and 0.00010 mg/L, all 6 to 9 times below the background level of 0.00090 mg/L.

RESPONSE TO AGENCY COMMENTS
ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

Comments from Environmental Protection Agency (EPA) Region IX – dated 27 September 1999

	EPA COMMENTS	NAVY/CDM FEDERAL RESPONSE
	No Comments.	

Department of Toxic Substances Control

Edwin F. Lowry, Director
5796 Corporate Avenue
Cypress, California 90630

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

February 3, 2000

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, California 921012-8517

RESPONSE TO NAVY'S RESPONSE TO DTSC'S COMMENTS ON DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN, LONG BEACH NAVAL SHIPYARD, LONG BEACH CALIFORNIA

Dear Mr. Rollefson:

The Department of Toxic Substances Control (DTSC) has some concerns regarding two issues that the Department of Navy (DoN) still has not addressed properly in their previous response:

1. Section 4.53.9

   As stated previously in our comments dated November 15, 1999, DTSC requests an assurance that the new owner will continue to comply with all applicable state and federal regulations at all Areas of Concern (AOC) after early transfer of ownership to the City of Long Beach . Therefore, please identify and describe a reporting mechanism in this document.

2. General Section

   DTSC requests that the 165 AOCs which are recommended for No Further Action will be compared to residential Preliminary Remediation Goals so as to determine whether or not any of these sites should be deed restricted for industrial use only. However, if the DoN prefers, please state in this document that all 165 AOCs will be restricted to industrial use only.

If you have questions or need further information, please call me at (714)484-5381 or call Ms. Jennifer Rich at (714)484-5415.

Sincerely,

Sue Hakim
Hazardous Substance Scientist
Base Closure and Reuse Unit
Southern California Branch
Office of Military Facilities

cc: Mr. Martin Hausladen
U.S. Environmental Protection Agency
75 Hawthorne Street, U-9-2
San Francisco, California 94105

Ms. Ana Veloz - Townsend
California Regional Water Quality Control Board
Los Angeles region
320 West Fourth Street, Suite 200
Los Angeles, California, 90013

Ms. Christine Houston
Port of Long Beach
925 Harbor Plaza
Long Beach, California 90802

California Regional Water Quality Control Board
Los Angeles Region

nston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

February 14, 2000

Commander
Southwest Division, Naval Facilities Engineering Command
Code 05BN.DR (Mr. Duane Rollefson)
1220 Pacific Highway
San Diego, CA 92132-5190

RESPONSE TO AGENCY COMMENTS ON THE DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN, LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE No. 90-75)

Dear Mr. Rollefson:

We have received and reviewed the Navy's *Response to Agency Comments on the Draft Preliminary Assessment/Sampling Report for 171 Group B Areas of Concern, Long Beach Naval Shipyard, Long Beach, California,* dated January 12, 2000. In addition to the above referenced letter, the Navy also provided us with the information we requested on how the background levels for mercury and arsenic were developed for the Long Beach Naval Complex. We have reviewed the information submitted and have determined that our comments on the draft report have been appropriately addressed. We have no additional comments on the draft document. The Navy is authorized to submit the final version of this report.

If you have any questions, please contact me at (213) 576-6738.

Sincerely,

Ana M. Townsend
Sanitary Engineer Associate
Site Cleanup Unit

cc: Martin Hausladen, Environmental Protection Agency
Sue Hakim, Department of Toxic Substances Control
Thomas Macchiarella, Southwest Division, Naval Facilities Engineering Command

RESPONSE TO AGENCY COMMENTS
ON THE NAVY'S RESPONSE TO DTSC COMMENTS ON DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

Comments from Department of Toxic Substances Control (DTSC) - dated February 3, 2000

		DTSC COMMENTS	NAVY/CDM FEDERAL RESPONSE
Specific	1.	Section 4.53.9, As stated previously in our comments dated November 15, 1999, DTSC requests an assurance that the new owner will continue to comply with all applicable state and federal regulations at all Areas of Concern (AOC) after early transfer of ownership to the City of Long Beach. Therefore, please identify and describe a reporting mechanism in this document.	The following text has been added to the end of Section 4.53.9: "At the time of conveyance, the Department of the Navy (DoN) will provide the transferee with all information gathered on the AOCs. It is the responsibility of the transferee to determine the appropriate handling and disposal of soil or other media removed from any AOC at the former Long Beach Naval Complex. The DoN is not in a position to provide assurances that the new owner will comply with all applicable state and federal regulations at all Areas of Concern. The enforcement of state or federal laws and regulations dealing with hazardous wastes is the responsibility of those state and federal agencies given such authority."
General	2.	General Section, DTSC requests that the 165 AOCs which are recommended for No Further Action will be compared to residential Preliminary Remediation Goals so as to determine whether or not any of these sites should be deed restricted for industrial use only. However, if the DoN prefers, please state in this document that all 165 AOCs will be restricted to industrial use only.	The DoN together with DTSC, US EPA and the RWQCB, Los Angeles Region decided on which AOCs would be sampled for soil contamination. At that time there was no indication that DTSC disagreed with decisions on soil sample sites or that all 165 AOCs should be compared to residential PRGs. At those AOCs where sampling was warranted soil sample results were compared to both residential and industrial PRGs. At six of those AOCs (AOC HIST 1, AOC MISC 1, AOC MISC 5, AOC PT 10, AOC ADD 13 and AOC ADD 14) certain analytes exceeded residential PRGs but not industrial PRGs. These six AOCs will be the subject of further actions.

RESPONSE TO AGENCY COMMENTS
ON THE NAVY'S RESPONSE TO DTSC COMMENTS ON DRAFT PRELIMINARY ASSESSMENT/SAMPLING REPORT FOR 171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CA

Comments from Regional Water Quality Control Board (RWQCB) - dated February 14, 2000

	RWQCB COMMENTS	NAVY/CDM FEDERAL RESPONSE
1.	Previous comments have been addressed, no additional comments	N/A

Comments from Environmental Protection Agency (EPA) Region IX – dated 27 September 1999

	EPA COMMENTS	NAVY/CDM FEDERAL RESPONSE
1.	No Comments.	N/A

FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 4 of 6
Appendix O - Part 1

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

Prepared by:

CDM FEDERAL PROGRAMS CORPORATION
3760 Convoy Street, Suite 210
San Diego, California 92111

14 April 2000

Data Validation Reports
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
VOLUME 4 of 6				
98-3365	2941C1	6/10/98	Volatiles	VOCs
98-3365	2941C2	6/10/98	Semivolatiles	SVOCs
98-3365	2941C3	6/10/98	Polychlorinated Biphenyls	PCBs
98-3365	2941C6	6/10/98	Wet Chemistry	pH
98-3365	2941C7	6/10/98	TPH-Gasoline	TPH-Gasoline
98-3365	2941C8	6/10/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A1	6/11/98	Volatiles	VOCs
98-3406	3048A2	6/11/98	Semivolatiles	SVOCs
98-3406	3048A3	6/11/98	Polychlorinated Biphenyls	PCBs
98-3406	3048A4	6/11/98	Metals	Metals
98-6314	3715A4	6/11/98	Tin	Tin
98-3406	3048A7	6/11/98	TPH-Gasoline	TPH-Gasoline
98-3406	3048A8	6/11/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A16	6/11/98	Cyanide	CN
98-3406	3048A28	6/11/98	Hexavalent Chromium	Cr^{+6}
98-3406	3048A6	6/11/98	pH	pH
98-3459	3048B1	6/16/98	Volatiles	VOCs
98-3459	3048B2	6/16/98	Semivolatiles	SVOCs
98-3459	3048B4	6/16/98	Metals	Metals
98-3459	3048B3	6/16/98	Polychlorinated Biphenyls	PCBs
98-3459	3048B7	6/16/98	TPH-Gasoline	TPH-Gasoline
98-3459	3048B8	6/16/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3459	3048B16	6/16/98	Cyanide	CN
98-3459	3048B28	6/16/98	Hexavalent Chromium	Cr^{+6}
98-3459	3048B6	6/16/98	pH	pH
98-3466	3048C1	6/17/98	Volatiles	VOCs
98-3466	3048C2	6/17/98	Semivolatiles	SVOCs
98-3466	3048C4	6/17/98	Metals	Metals
98-3466	3048C3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3467	3048D3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3466	3048C7	6/17/98	TPH-Gasoline	TPH-Gasoline
98-3466	3048C8	6/17/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3466	3048C16	6/17/98	Cyanide	CN
98-3466	3048C28	6/17/98	Hexavalent Chromium	Cr^{+6}

Data Validation Reports (continued)
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Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
98-3466	3048C6	6/17/98	pH	pH
98-3473	3048E1	6/18/98	Volatiles	VOCs
98-3473	3048E2	6/18/98	Semivolatiles	SVOCs
98-3473	3048E4	6/18/98	Metals	Metals
98-3473	3048E3	6/18/98	Polychlorinated Biphenyls	PCBs
98-3473	3048E7	6/18/98	TPH-Gasoline	TPH-Gasoline
98-3473	3048E8	6/18/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3473	3048E16	6/18/98	Cyanide	CN
98-3473	3048E6	6/18/98	pH	pH
47515A	3715K21	12/15/98	Dioxins/Dibenzofurans	Dioxins
47515B	3715L21	12/15/98	Dioxins/Dibenzofurans	Dioxins
VOLUME 5 of 6				
99-2007	3715B1	2/23-24/99	Volatiles	VOCs
99-2007	3715B2	2/23-2/23-24/99	Semivolatiles	SVOCs
99-2007	3715B3	2/23-24/99	Polychlorinated Biphenyls	PCBs
99-2007	3715B7	2/23-24/99	TPH-Gasoline	TPH-Gasoline
99-2007	3715B8	2/23-24/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2007	3715B4	2/23-24/99	Metals	Metals
99-2007	3715B6	2/23-24/99	Wet Chemistry	pH
99-2065	3715C1	2/25/99	Volatiles	VOCs
99-2065	3715C2	2/25/99	Semivolatiles	SVOCs
99-2065	3715C3	2/25/99	Polychlorinated Biphenyls	PCBs
99-2065	3715C8	2/25/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2065	3715C4	2/25/99	Metals	Metals
99-2065	3715C6	2/25/99	pH	pH
99-2110	3715D1	2/26/99	Volatiles	VOCs
99-2110	3715D2	2/26/99	Semivolatiles	SVOCs
99-2110	3715D3	2/26/99	Polychlorinated Biphenyls	PCBs
99-2110	3715D7	2/26/99	TPH-Gasoline	TPH-Gasoline
99-2110	3715D8	2/26/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2110	3715D4	2/26/99	Metals	Metals
99-2110	3715D6	2/26/99	pH	pH
99-2139	3715E1	3/1/99	Volatiles	VOCs
99-2139	3715E2	3/1/99	Semivolatiles	SVOCs
99-2139	3715E3	3/1/99	Polychlorinated Biphenyls	PCBs

Data Validation Reports (continued)
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Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2139	3715E7	3/1/99	TPH-Gasoline	TPH-Gasoline
99-2139	3715E8	3/1/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2139	3715E4	3/1/99	Metals	Metals
99-2139	3715E6	3/1/99	pH	pH
99-2178	3715F1	3/2/99	Volatiles	VOCs
99-2178	3715F2	3/2/99	Semivolatiles	SVOCs
99-2178	3715F3	3/2/99	Polychlorinated Biphenyls	PCBs
99-2178	3715F7	3/2/99	TPH-Gasoline	TPH-Gasoline
99-2178	3715F8	3/2/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2178	3715F4	3/2/99	Metals	Metals
99-2178	3715F6	3/2/99	Wet Chemistry	pH
99-2216	3715G2	3/3/99	Semivolatiles	SVOCs
99-2216	3715G8	3/3/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2216	3715G4	3/3/99	Metals	Metals
99-2216	3715G6	3/3/99	pH	pH
99-2224	3715H2	3/4/99	Semivolatiles	SVOCs
99-2224	3715H8	3/4/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2224	3715H4	3/4/99	Metals	Metals
99-2224	3715H6	3/4/99	pH	pH
VOLUME 6 of 6				
99-2302	3715I1	3/5/99	Volatiles	VOCs
99-2302	3715I2	3/5/99	Semivolatiles	SVOCs
99-2302	3715I3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2302	3715I8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2302	3715I4	3/5/99	Metals	Metals
99-2302	3715I6	3/5/99	pH	pH
99-2692	3749A1	3/5/99	Volatiles	VOCs
99-2692	3749A2	3/5/99	Semivolatiles	SVOCs
99-2692	3749A3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2692	3749A8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2692	3749A6	3/5/99	pH	pH
99-2329	3715J1	3/8/99	Volatiles	VOCs
99-2329	3715J2	3/8/99	Semivolatiles	SVOCs
99-2329	3715J7	3/8/99	TPH-Gasoline	TPH-Gasoline
99-2329	3715J8	3/8/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2329	3715J4	3/8/99	Metals	Metals
99-2329	3715J6	3/8/99	pH	pH
99-2367	3722B1	3/9/99	Volatiles	VOCs
99-2367	3722B2	3/9/99	Semivolatiles	SVOCs
99-2367	3722A3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B7	3/9/99	TPH-Gasoline	TPH-Gasoline
99-2367	3722B8	3/9/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2367	3722B4	3/9/99	Metals	Metals
99-2367	3722B6	3/9/99	Wet Chemistry	pH
99-2392	3722C1	3/10/99	Volatiles	VOCs
99-2392	3722C2	3/10/99	Semivolatiles	SVOCs
99-2392	3722C7	3/10/99	TPH-Gasoline	TPH-Gasoline
99-2392	3722C8	3/10/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2392	3722C4	3/10/99	Metals	Metals
99-2392	3722C6	3/10/99	pH	pH

Notes:

CDM = Camp, Dresser & McKee
CN = Cyanide
Cr^{+6} = Hexavalent Chromium
LDC = Laboratory Data Consultants
No. = Number
PCBs = Polychlorinated Biphenyls
SDG = Sample Delivery Group
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

DATA VALIDATION SUMMARY

During the 11 to 18 June 1998 field investigation of nine Areas of Concern (AOCs) at the Long Beach Naval Shipyard (LBNSY), Long Beach, California, a total of 33 soil, 19 groundwater, 3 liquid, 4 wood block, and 2 wipe samples were collected. During the 23 February to 10 March 1999 portion of the field investigation, a total of 59 soil, 56 groundwater, 8 sediment, and 4 wipe samples were collected. Field QC samples are not included in the totals listed above. Data validation for these two phases of work are addressed separately in this section to allow the reader to locate details in Appendix O more easily.

Selected samples were analyzed for one or more of the following tests, as defined in the sampling and analysis request matrix (Appendix K):

Analytical Category	Method Number
Volatile organic compounds (VOCs)	U.S. EPA Method 8260B
Semivolatile organic compounds (SVOCs)	U.S. EPA Method 8270C
Polychlorinated biphenyls (PCBs)	U.S. EPA Method 8082
Total petroleum hydrocarbons (TPH) as gasoline (TPH-g)	Modified 8015
TPH as diesel (TPH-d), and TPH as motor oil (TPH-m)	Modified 8015
Metals	U.S. EPA Method 6010C, 7470/7471A
Hexavalent chromium	U.S. EPA Method 7196A
Wet chemistry parameters (i.e., cyanide and pH)	U.S. EPA Method 9010A/335.2, 9040/9045B
Dioxins and furans	U.S. EPA Method 8280A

In addition, quality control (QC) samples (i.e., field duplicates [FD], equipment rinsate blanks, trip blanks, and field blanks) were also collected and analyzed for the above mentioned parameters. The analyses were performed by a subcontract laboratory, Applied Physics and Chemistry Laboratory (APCL) located in Chino, California.

According to the requirements described in the Quality Assurance Project Plan (QAPP) (CDM Federal 1998a), raw data were validated (equivalent to United States Environmental Protection Agency [EPA] Level IV, formerly called Navy Level D) for 10 percent (%) of the analytical results and for the remaining 90% of the results, QC samples and checks were validated (equivalent to U.S. EPA Level III, formerly called Navy Level C) criteria. Data validation was performed by a subcontractor, Laboratory Data Consultants, Inc. (LDC), located in Carlsbad, California.

Data validation was performed in accordance with the Naval Facilities Engineering Service Center (NFESC) Interim Guidance Document *Navy Installation Restoration Laboratory Quality Assurance Guide* dated February 1996 (NFESC 1996). The data validation guidelines were supplemented by the U.S. EPA data validation guidance documents *U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, (U.S. EPA 1994b) and "*U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*," both dated February 1994 (U.S. EPA 1994a), where applicable.

Data qualifiers were assigned to the analytical results during the data validation process and were noted in Analyses Results (Form-1) submitted by the laboratory, which are attached to each data validation report (DVR). Except for data qualified with "R", which means rejected and unusable, all data are considered usable for the intended purposes taking into account the following qualifiers:

- "J" (estimated value);
- "N" (presumptive evidence for the presence of the material);
- "U" (non-detected); or
- "JN" (presumptive evidence for the presence of the material at an estimated value).

"J" qualified data should be used with caution. The data qualifiers assigned are discussed in the individual DVRs.

All data validation reports were reviewed by CDM Federal personnel. Results of the data validation reports are summarized below.

VOCs (June 1998): No data were rejected. Approximately 21 VOCs exceeded initial or continuing calibration QC limits and the associated sample results in various sample delivery groups (SDGs) were qualified as estimated (J/UJ). The surrogate recovery for 1,2-dichloroethane-d4 in sample 98SY-T01n-W-2 (a field duplicate) was above the QC limits and the associated non-detect results were qualified as estimated (UJ). Methylene chloride was detected in three trip blank samples, resulting in qualification of methylene chloride as non-detect (U) in four samples where it was originally reported as detected. The precision for field duplicate results were within the QC limit, except for seven analytes in four pairs of field duplicate samples that were qualified as estimated. All holding times were met.

VOCs (February-March 1999): The only data rejected were carbon tetrachloride results for 9 samples in sample delivery group (SDG) 99-2065. Approximately 18 target VOC compounds exceeded continuing calibration QC limits and the associated sample results in various SDGs were qualified as estimated (J/UJ). The surrogate recoveries in four samples were below the QC limits and target compounds in associated samples were qualified as estimated (J/UJ). Chloroform was detected in all 10 trip blank samples, resulting in qualification of chloroform

as non-detect (U) in 31 samples where it was originally reported as detected. The precision for field duplicate results were within the QC limit, except one analyte in three pairs of field duplicate samples that were qualified as estimated.

Holding times were missed by seven days for two samples due to a laboratory error, resulting in qualification of analytes as estimated (J/UJ): these two samples, collected from a storm drain and a sump south of Building 104 for AOC ADD 13, were not required by the Work Plan or any addenda; instead, they were requested for analysis after observing the oily appearance of the samples. In the same two samples, trichloroethene (TCE) was qualified as estimated (J) because the matrix spike/matrix spike duplicate (MS/MSD) relative percent difference (RPD) was high. Overall, the majority of the results required no qualification.

SVOCs (June 1998): No SVOC results were rejected, except for several phenolic compound non-detections in sample 98SY-M1Pa-S-0 because of low surrogate recoveries; all other results for this sample were qualified as estimated (J/UJ). Four SVOCs exceeded continuing calibration QC limits and the associated sample results in two soil and four wood block were qualified as estimated (J/UJ). Up to nine analyte results in three wood block samples were qualified as estimated because results exceeded the calibration range. Internal standards were outside of QC limits for five samples, resulting in sample results being qualified as estimated (J/UJ) for seven analytes in two soil and one wood block samples and 13 analytes in two wood block samples. No SVOCs were identified in method or field blank samples. The precision for field duplicate results were within the QC limit, except for one SVOC in two pairs of field duplicates and 13 SVOCs in a pair of wood block field duplicate samples that were qualified as estimated (J). All holding times were met.

SVOCs (February-March 1999): No SVOCs results were rejected. All planned samples were analyzed within holding times. Two samples not originally planned for collection (99SY-A13b-S-1 and 99SY-A13e-S-1.5 from the Building 104 Mercury Pump Stand site [AOC ADD 13] that were oily in appearance) exceeded holding times and all results for these samples were qualified as estimated (J/UJ). Some other results were qualified as estimated due to deficiencies associated with continuing calibration, internal standard recoveries, MS/MSD recoveries, or field duplicate RPDs. However, the majority of the results required no qualification.

Bis (2-ethylhexyl) phthalate (BEHP) was detected in 18 site groundwater samples at concentrations ranging from 0.001 to 0.110 mg/L, although it was not a suspected site contaminant at most of the AOCs. BEHP is recognized by the U.S. EPA as a common laboratory contaminant (U.S. EPA 1994b), typically as a result of BEHP in plasticizers and plastic gloves (especially when they are contacted by solvents). Therefore, data validation activities included an investigation of whether there was evidence for this project that BEHP was reported in site samples as a result of laboratory cross-contamination.

First, laboratory method blanks and field QC sample results were reviewed, but none had BEHP detections. Second, the APCL QA Director was contacted to discuss this issue. The APCL QA Director, LDC, and CDM Federal chemists all agreed that although no blank samples for this project had BEHP detected, 10 of 18 BEHP detections in groundwater were below the reporting limit of 0.010 mg/L, and BEHP contamination is intermittent, so it is still possible that laboratory cross-contamination could have occurred.

According to the U.S. EPA, BEHP (also referred to as DEHP) "is a ubiquitous laboratory contaminant" and "it is very difficult to accurately determine the low levels of this compound that are usually present in the environment. Laboratory contamination often undermines the credibility of the data and, therefore, reported concentrations of DEHP in environmental samples must be viewed with caution" (U.S. EPA 1991b). Also, according to this document, BEHP is "a contaminant in almost all laboratory equipment and reagents. Plastics, glassware, aluminum foil, cork, rubber, glass wool, Teflon sheets, and solvents have all been found to be contaminated" (U.S. EPA 1991b).

In summary, sample results for BEHP in groundwater were considered potential site contaminants when they exceeded 0.010 mg/L.

Metals **(June 1998):** No data were rejected. However, a number of metals results were qualified as estimated (J/UJ) due to deficiencies associated with MS/MSD recoveries, ICP serial dilutions, or field duplicate precision. All metals except tin were detected in various blanks, i.e., preparation method blanks, initial or continuing calibration blanks, field blanks, or equipment rinsate blanks. The actual sources of the blank contamination could not be confirmed. Associated low level detected results were qualified as not detected (U/UJ). Continuing calibration limits were exceeded for tin, resulting in both tin results qualified as estimated (J). All holding times were met.

Metals **(February-March 1999):** No data were rejected. However, a number of metals results were qualified as estimated (J/UJ) due to deficiencies associated with MS/MSD recoveries or field duplicate precision. All seventeen metals were detected in various blanks, i.e., preparation method blanks, initial or continuing calibration blanks, field blanks, or equipment rinsate blanks. The actual sources of the blank contamination could not be confirmed. Associated low level detected results were qualified as not detected (U/UJ).

Wet Chemistry **(June 1998):** Wet chemistry data included cyanide and pH analyses. No data were rejected. The precision for field duplicate results were within the QC limits, except for the detection of cyanide in sample 98SY-T01k-W-5 and its field duplicate, whose precision was high, so the cyanide result for 98SY-T01k-W-5 was qualified as estimated (J). All holding times were met.

Wet Chemistry **(February-March 1999):** Cyanide and pH analyses were performed. No data were rejected or qualified. All analytical results were valid.

PCBs (June 1998): No data were rejected. RPD limits were exceeded for three MS/MSD samples resulting in results for Aroclors 1016 and 1260 in 6 soil and 4 wood block samples qualified as estimated (J/UJ). The precision for field duplicate results were within the QC limit, except for detections in one pair of field duplicate samples that were qualified as estimated (J): no PCBs were reported in sample 98SY-MW4a-B-0, while its duplicate (98SY-MW4c-B-0) had 6.56 mg/kg Aroclor 1260 reported. No laboratory control standard (LCS) was analyzed in one case, resulting in results for one sample qualified as estimated (J/UJ). All holding times were met.

Polychlorinated Biphenyls (PCBs) (February-March 1999): No data were rejected. Only two sample results required qualification as estimated concentrations, both due to field duplicate results whose precision exceeded criteria: sample 99SY-HI8a-S-1 at the Chemical Cleaning Area (AOC HIST 8) and 99SY-P17a-S-0 near equipment number 618444, Sump A and Sump B (AOC PCB 17) in Building 132 .

TPH-g (June 1998): No data were rejected. TPH-g results were within calibration QC limits and surrogate recoveries were within QC limits. TPH-g was identified in three method blank samples, resulting in associated detections in 2 soil and 4 wood block samples qualified as non-detects (U). RPD limits were exceeded for one MS/MSD wood block sample resulting in three associated detections qualified as estimated (J). The precision for field duplicate results were within the QC limit, except for TPH-g detections in two pairs of field duplicate samples that were qualified as estimated (J/UJ). All holding times were met.

TPH-g (February-March 1999): No data were rejected. TPH-g was detected in three method blanks (0.03, 0.03, and 0.04 mg/L) and seven associated results were qualified as non-detect (U). TPH-g was also detected in both equipment rinsate blanks and the field blank (Table J-2), at concentrations of 0.06, 0.11, and 0.05 mg/L, respectively. Analytical results lower than approximately 0.3 mg/L (using the 5x rule for the median 0.06 mg/L detection) should be used with caution because false positives (possibly from laboratory or source water contamination) may have occurred.. RPDs in one pair of field duplicate samples exceeded the QC limit and these sample results were qualified as estimated (J).

TPH-d/TPH-m (June 1998): No data were rejected. TPH-d/TPH-m results were within calibration QC limits and surrogate recoveries were within QC limits. TPH-d was identified in one equipment rinsate blank sample, but no sample results were affected. RPD limits were exceeded for two MS/MSD wood block samples, resulting in two associated detections qualified as estimated (J). The precision for field duplicate results were within the QC limit, except for TPH-d/TPH-m detections in two pairs of field duplicate samples that were qualified as estimated (J/UJ). All holding times were met.

TPH-d/TPH-m (February-March 1999): No data were rejected. TPH-d was detected in the field blank at a concentration of 0.02 mg/L and the equipment rinsate blank at 0.03 mg/L. TPH-d sample results lower than 0.15 mg/L should be used with caution because false positives may have occurred. The RPDs in five pairs of field duplicates for TPH-d and seven pair of field duplicates for TPH-m exceeded the QC limit and were qualified as estimated (J). One laboratory control standard (LCS) recovery was outside the criteria (high), resulting in six sample results qualified as estimated (J). One surrogate recovery (for sample 99SY-AD5b-S-1) was high, resulting in the TPH-d and TPH-m results for that sample being qualified as estimated (J).

Holding times were missed by seven days for two samples due to a laboratory error, resulting in qualification of analytes as estimated (J): these two samples, collected from a storm drain and a sump south of Building 104 for AOC ADD 13, were not required by the Work Plan or any addenda; instead, they were requested for analysis after observing the oily appearance of the samples. In the same two samples, the MS/MSD RPD was high, also resulting in the J qualification.

Hexavalent Chromium (June 1998): No data were rejected. In fact, no qualifications of any kind were required for hexavalent chromium data. The short holding time of 24 hours for water samples was met for all water samples.

Dioxins and Furans (June 1998): No data were rejected for the two samples analyzed for dioxins and furans. Total tetrachlorodibenzodioxin (TCDD) was detected in both method blank samples, while total pentachlorodibenzodioxin (PeCDD) and total tetrachlorodibenzofuran (TCDF) were identified in one of the method blank samples, resulting in three associated estimated maximum possible concentrations (EMPCs) qualified as non-detects (U). Percent recoveries (%R) and RPD limits were exceeded for the MS/MSD sample resulting in three detections qualified as estimated (J). Two results were out of the calibration range, resulting in qualification of two results as estimated (J). All holding times were met.

MS/MSD analyses were not performed for all SDGs because typically less than the allowable 20 samples were in each SDG. However, the overall frequency of MS/MSD analyses was greater than 5 percent (i.e., 1 in 20).

Due to a laboratory error, analysis of equipment rinsate sample 98SY-RE2f-W-10 was not performed. This sample was collected from soil sampling equipment on 18 June 1998. The previous soil sampling equipment rinsate sample and the subsequent soil sampling equipment rinsate sample did not indicate significant soil sampling equipment decontamination or cross-contamination problems, so no significant data gap is deemed to have occurred.

Because of the misinterpretation of hand-written words on the chain-of custody forms, the following cross-reference list has been prepared to identify sample numbers in the laboratory reports versus the actual sample numbers:

Laboratory Report	Actual Sample Name
98SY-PL1a-S-1.0	98SY-PC1a-S-1.0
98SY-PL1a-W-10	98SY-PC1a-W-10
99SY-BT1a-W-7	99SY-BT1q-W-7
99SY-MI8a-S-1	99SY-HI8a-S-1
99SY-MI8a-W-11.4	99SY-HI8a-W-11.4
99SY-MI8b-S-1	99SY-HI8b-S-1
99SY-MI8b-W-10.1	99SY-HI8b- W-10.1
99SY-MI8c-S-1	99SY-HI8c-S-1
99SY-MI8c-W-11.4	99SY-HI8c-W-11.4
99SY-MI8d-S-1	99SY-HI8d-S-1
99SY-MI8d-W-11.4	99SY-HI8d-W-11.4
99SY-H1I-S-5	99SY-HI1i-S-5
99SY-H1I-W-25	99SY-HI1i-W-25
99SY-H1J-S-5	99SY-HI1j-S-5
99SY-H1J-W-30	99SY-HI1j-W-30

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UPDATE
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DI(2-ETHYLHEXYL)PHTHALATE

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Draft
For Public Comment

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

Comment Period Ends:

February 18, 1992

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1. PUBLIC HEALTH STATEMENT

This Statement was prepared to give you information about DEHP and to emphasize the human health effects that may result from exposure to it. The Environmental Protection Agency (EPA) has identified 1,300 sites on its National Priorities List (NPL). DEHP has been found in at least 164 of these sites. However, we do not know how many of the 1,300 NPL sites have been evaluated for DEHP. As EPA evaluates more sites, the number of sites at which DEHP is found may change. This information is important for you to know because DEHP may cause harmful health effects and because these sites are potential or actual sources of human exposure to DEHP.

When a chemical is released from a large area, such as an industrial plant, or from a container, such as a drum or bottle, it enters the environment as a chemical emission. This emission, which is also called a release, does not always lead to exposure. You can be exposed to a chemical only when you come into contact with the chemical. You may be exposed to it in the environment by breathing, eating, or drinking substances containing the chemical or from skin contact with it.

If you are exposed to a hazardous chemical such as DEHP, several factors will determine whether harmful health effects will occur and what the type and severity of those health effects will be. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutritional status, family traits, life style, and state of health.

1.1 WHAT IS DEHP?

DEHP, which is an abbreviation for di(2-ethylhexyl)phthalate, is a man-made chemical that is added to plastics to make them flexible. Other names for this compound are Platinol AH, Octoil, Silicol 150, Bisoflex 81, and Eviplast 80. DEHP is a colorless liquid with almost no odor. It does not evaporate easily, and thus very little will be present in the air even near sources of production. It dissolves more easily in materials such as gasoline, paint removers, and oils than it does in water. It is present in many plastics, especially vinyl materials, which contain up to 40% DEHP. DEHP is present in plastic products such as rainwear, footwear, upholstery materials, imitation leather, waterproof gloves, tablecloths, shower curtains, food packaging materials, floor tiles, and children's toys. It is an ingredient in paints, flexible tubing, plastic bags, and containers for blood, and other medical products that are administered through the veins directly into the blood of patients. Additional information on the properties of DEHP and its uses is found in Chapters 3 and 4.

DEHP can also enter your body during certain medical procedures. Blood products that are stored in plastic bags and used for transfusions contain from 14–120 parts of DEHP per million parts of blood (ppm). Other medical products also can release DEHP from their plastic containers and then transfer DEHP to the patient. DEHP can enter your blood during dialysis. The plastic tubing in dialysis units frequently contains DEHP. DEHP is also present in the plastic tubing of some respirators where it can be carried to the lungs.

You can be exposed to DEHP through drinking water. DEHP levels of 0.04–30 parts per billion (ppb) have been found in the drinking water of some cities. Your estimated average intake of DEHP from water is 0.02 mg per day. If you live near a landfill or waste site and use a private or public drinking water well, you may be exposed to higher than average levels of DEHP in drinking water.

You can breathe in DEHP that has been released to the environment. The average air level of DEHP is very low, generally less than 2 parts of DEHP per trillion parts of air (ppt) in cities and industrial areas. Higher concentrations may occur near waste incinerators. DEHP levels in the indoor air in a newly painted room or a room with recently installed flooring could be as high as levels in the outdoor air near a waste incinerator. Workers in factories that make or use DEHP can also breathe in higher than average levels of this compound. Additional information concerning sources of exposure to DEHP is found in Chapter 5.

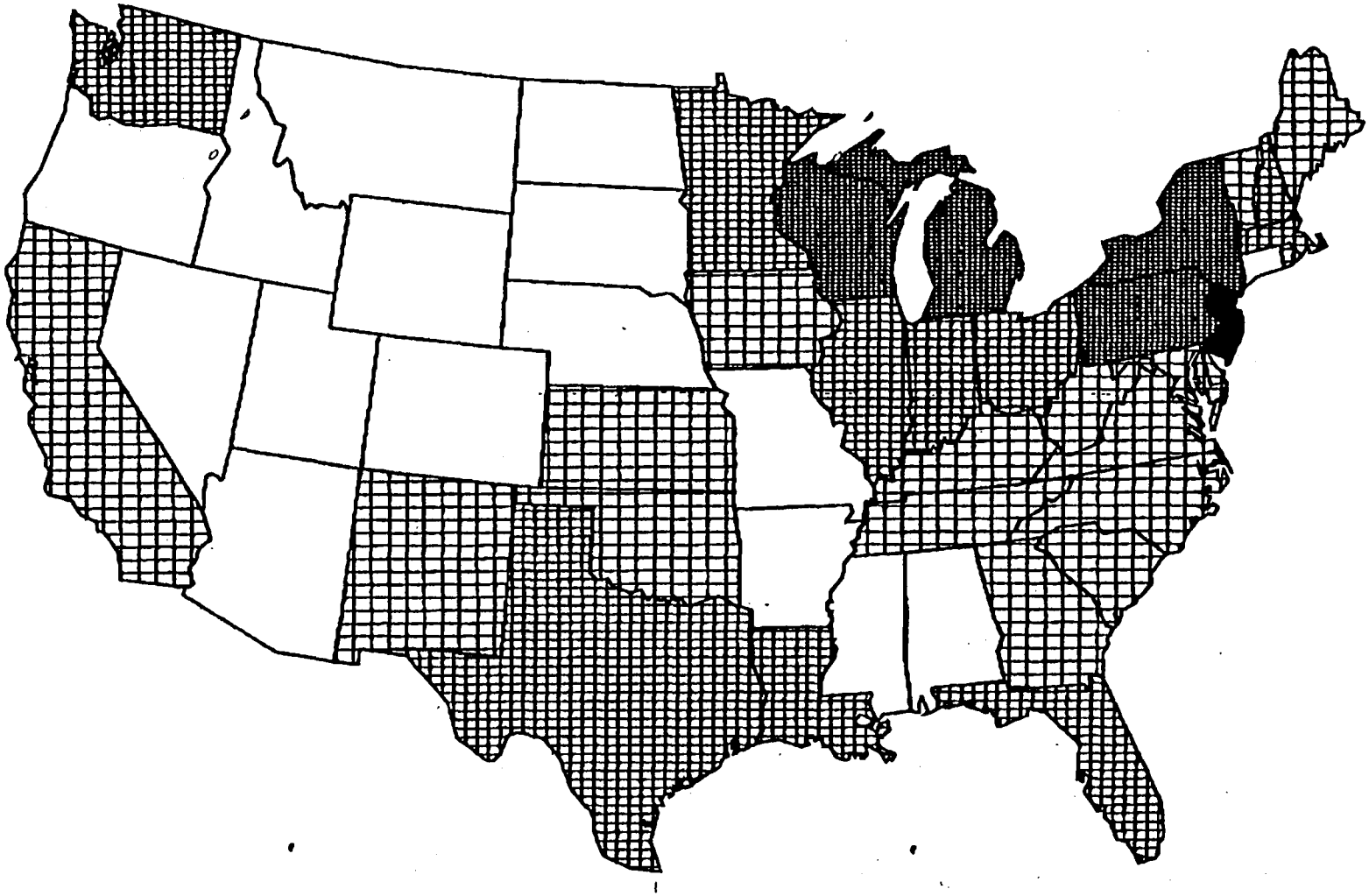
1.4 HOW CAN DEHP ENTER AND LEAVE MY BODY?

DEHP can enter your body when you eat food or drink water containing this material or when you breathe in contaminated air. Almost all of the DEHP that enters your body in food, water, or air is taken up into the blood from the lungs and intestines. Small amounts of DEHP may also enter your body by skin contact. DEHP may be introduced directly into your bloodstream if you get a blood transfusion, receive other intravenous liquids, or have dialysis treatments.

After DEHP is absorbed into your body, most of it is rapidly broken down to MEHP and 2-ethylhexanol. The toxicities of MEHP and 2-ethylhexanol are similar to the toxicity of DEHP. These compounds go to your liver, kidneys, and testes, and small amounts will become stored in your fat. Most of the DEHP, MEHP, and 2-ethylhexanol leave your body within 24 hours in the urine and feces. Additional information on the uptake, metabolism, and excretion of DEHP is found in Chapter 2.

DRAFT FOR PUBLIC COMMENT

FIGURE 5-1. FREQUENCY OF NPL SITES WITH DEHP CONTAMINATION *



*Derived from MIS 1990

5.3.2.2 Water

Biodegradation may be an important fate process for DEHP in water under aerobic, but not anaerobic, conditions (O'Connor et al. 1989; O'Grady et al. 1985; Tabak et al. 1981; Thomas et al. 1986). DEHP was significantly biodegraded (about 95%) after gradual acclimation of the microbial population over a period of about 3 weeks under conditions of the static-flask screening test (Tabak et al. 1981), and the reported half-life of DEHP due to microbial activity in river water is about 1 month (Wams 1987). Mixed microbial systems appear to be most efficient for biodegradation of DEHP (Wams 1987). Reported removal of DEHP from aqueous systems by activated sludge biodegradation under aerobic conditions ranged from 70 to 100%, depending on the microbial strains present and other variables (Kurane 1986; O'Grady et al. 1985). Under anaerobic conditions, biodegradation of DEHP is negligible (O'Connor et al. 1989; Wams 1987).

Chemical hydrolysis of DEHP occurs too slowly to be important (Howard 1989). The estimated half-life for DEHP hydrolysis in water is 100 years (Wams 1987).

5.3.2.3 Soil

Biodegradation of DEHP also occurs in soil, but at a slightly slower rate than in water, since adsorption onto the soil organic matter reduces the availability of DEHP for degradation (Wams 1987). Many other environmental factors influence the rate of DEHP biodegradation. In sediments, optimum degradation of DEHP occurred at high concentration, warm temperatures, and in a nutrient-rich system (Johnson et al. 1984). Anaerobic biodegradation of DEHP in sediments was reported to occur, but more slowly than under aerobic conditions (Johnson et al. 1984).

5.4 LEVELS MONITORED OR ESTIMATED IN THE ENVIRONMENT

Since DEHP is a common laboratory contaminant difficulties often arises in the accurate measurement of the low concentrations of this compound usually present in environmental samples. This limitation should be considered when evaluating monitored levels in all media.

5.4.1 Air

Although DEHP is a relatively nonvolatile compound, it has been detected at low levels in several air monitoring studies. Concentrations in remote marine areas average about 1 ng/m^3 (Atlas and Giam 1981; Giam et al. 1980), while average concentrations in urban and industrial atmospheres range up to 29 ng/m^3 (Bove et al. 1978; Eisenreich et al. 1981; Hoff and Chan 1987; Ligocki et al. 1985). A DEHP concentration of 300 ng/m^3 was reported for an air sample taken adjacent to a municipal incinerator (Thomas 1973). However, due to recent improvements in technology, emissions from incineration facilities are likely to be substantially reduced.

DEHP levels in indoor air may be higher due to slow volatilization from plastic products (Perwak et al. 1981; Wams 1987). Indoor air levels in rooms with new flooring could be about 0.2–0.3 mg/m^3 (Wams 1987). Other data for DEHP levels in indoor environments were not located.

5.4.2 Water

DEHP has been detected frequently in surface water, groundwater, and finished drinking water in the United States at concentrations generally in the low ppb range. It was detected in 24% of 901 surface water samples recorded in the STORET database at a median concentration of 10 ppb (Staples et al. 1985) and in water

6.2 ENVIRONMENTAL SAMPLES

Determination of DEHP in air, water, soil/sediments, and food is usually by GC analysis (EPA 1982a, 1982b, 1986c, 1986d, 1988a; Ishida et al. 1981; NIOSH 1985b; van Lierop and van Veen 1988; Williams 1973). An HPLC method for food has also been developed (Giust et al. 1990). Several representative methods appropriate for quantifying DEHP in each of these media are summarized in Table 6-2. The EPA has developed methods for analysis of drinking water (EPA 1988a), wastewater (EPA 1982a, 1982b), and soil/sediment (EPA 1986c, 1986d) samples. Many of the APHA (1989) methods for water are equivalent to the EPA methods. Determination of DEHP in PVC plastics may also be of interest and can be accomplished by GC analysis as described in the American Society for Testing and Materials (ASTM) Method D 3421-75 (TMA 1986).

Separation of DEHP from environmental samples is usually by extraction with an organic solvent such as hexane, chloroform, methylene chloride, or acetonitrile. Air samples are drawn through a solid sorbent material and desorbed with carbon disulfide (NIOSH 1985b). A purge and trap method may be used for separation of DEHP from the fat in foods (van Lierop and van Veen 1988). Detector options are identical to those mentioned above (Section 6.1). Detection limits for these methods are generally in the ppb range, which is probably below levels of health concern.

Detection and quantification of very low levels of DEHP are seriously limited by the presence of this compound as a contaminant in almost all laboratory equipment and reagents. Plastics, glassware, aluminum foil, cork, rubber, glass wool, Teflon sheets, and solvents have all been found to be contaminated (EPA 1988a; Giam et al. 1975; Williams 1973). While efforts have been made to reduce laboratory contamination (Giam et al. 1975; Thuren 1986), DEHP is still reported in laboratory blanks, even with thorough cleaning methods (EPA 1988a; Giam et al. 1975). Therefore, practical sample detection limits are often more than an order of magnitude higher than instrument or method detection limits. The EPA (1988a) reports that DEHP, along with other common phthalate and adipate esters, cannot generally be accurately or precisely measured at concentrations below about 2 ppb, due to blank contamination.

6.3 ADEQUACY OF THE DATABASE

Section 104(i)(5) of CERCLA directs the Administrator of ATSDR (in consultation with the Administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of DEHP is available. Where adequate information is not available, ATSDR, in conjunction with NTP, is required to assure the initiation of a program of research designed to determine the health effects (and techniques for developing methods to determine such health effects) of DEHP.

The following categories of possible data needs have been identified by a joint team of scientists from ATSDR, NTP, and EPA. They are defined as substance-specific informational needs that if met would reduce or eliminate the uncertainties of human health assessment. This definition should not be interpreted to mean that all data needs discussed in this section must be filled. In the future, the identified data needs will be evaluated and prioritized, and a substance-specific research agenda will be proposed.

6.3.1 Identification of Data Needs

Methods for Determining Biomarkers of Exposure and Effect. Exposure to DEHP may be evaluated by measuring the levels of this compound or its metabolites in blood, adipose tissue, and urine. Sensitive analytical methods, including GC/MS and HPLC, are available for these determinations. However,

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 10, 1998

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-BT1h-W-12.1
98SY-BT1i-W-10
98SY-PL1a-S-1.0
98SY-PL1a-W-10
98SY-RE1d-W-14
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2k-S-14
98SY-SW4a-S-2**
98SY-SW5a-S-2
98SY-TO4a-S-6
98SY-TO4a-W-12.1
98SY-TO4b-S-1
98SY-TO4b-W-2
98SY-TO4c-S-1
98SY-TO4c-W-3.5
98SY-TO4d-S-1
98SY-TO4e-S-1
98SY-TO4e-W-3.5
98SY-TO6a-S-2.5
98SY-TO6a-W-7
98SY-TO6b-S-2.5
98SY-TO6b-W-8.2
98SY-BT1h-W-12.1MS
98SY-BT1h-W-12.1MSD
98SY-PL1a-S-1.0MS
98SY-PL1a-S-1.0MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 17 soil samples and 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within QC limits with the following exceptions:

Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
6/18/98	Tetrachloroethene	25.4 (≤25.0)	98SY-BT1h-W-12.1	J	A
	n-Propylbenzene	26.6 (≤25.0)	98SY-BT1i-W-10	J	
	1,3,5-Trimethylbenzene	25.6 (≤25.0)	98SY-PL1a-W-10	J	
	tert-Butylbenzene	25.1 (≤25.0)	98SY-RE1d-W-14	J	
	1,2,4-Trimethylbenzene	25.6 (≤25.0)	98SY-SS1m-W-10	J	
	sec-Butylbenzene	27.6 (≤25.0)	98SY-BT1h-W-12.1MS	J	
	p-Isopropyltoluene	26.0 (≤25.0)	98SY-BT1h-W-12.1MSD	J	
	n-Butylbenzene-	29.3 (≤25.0)	98G2725-MB-01	J	
	1,2,3-Trichlorobenzene	26.8 (≤25.0)		J	
	Hexachlorobutadiene	41.2 (≤25.0)		J	

Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
6/19/98	Methylene chloride	28.4 (≤25.0)	98SY-TO4a-W-12.1 98SY-TO4b-W-2 98SY-TO4c-W-3.5 98SY-TO4e-W-3.5 98SY-TO6a-W-7 98SY-TO6b-W-8.2 98G2725-MB-02	J	A
6/18/98	Bromomethane 1,3,5-Trimethylbenzene Hexachlorobutadiene	29.4 (≤25.0) 25.3 (≤25.0) 38.3 (≤25.0)	98SY-PL1a-S-1.0MS 98SY-PL1a-S-1.0MSD 98G2729-MB-01	J J J	A
6/18/98	Bromomethane Trichlorofluoromethane 1,3,5-Trimethylbenzene Hexachlorobutadiene	31.2 (≤25.0) 27.7 (≤25.0) 25.9 (≤25.0) 40.0 (≤25.0)	98SY-PL1a-S-1.0 98SY-SS1m-S-6 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-TO4b-S-1 98SY-TO4c-S-1 98SY-TO4d-S-1 98SY-TO4e-S-1 98SY-TO6a-S-2.5 98G2729-MB-02	J J J J	A
6/19/98	Chloromethane Bromomethane Dibromomethane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Bromoform Hexachlorobutadiene	35.0 47.5 38.6 28.3 26.4 29.1 38.5	98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2 98SY-TO4a-S-6 98SY-TO6b-S-2.5 98G2747-MB-02	J J J J J J J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples 98SY-BT1h-W-12.1 and 98SY-BT1i-W-10 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
98SY-BT1i-W-10	6/10/98	Methylene chloride	1 ug/L	98SY-PL1a-S-1.0 98SY-PL1a-W-10 98SY-SS1m-S-6 98SY-SS1m-W-10 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2 98SY-TO4a-S-6 98SY-TO4a-W-12.1 98SY-TO4b-S-1 98SY-TO4b-W-2 98SY-TO4c-S-1 98SY-TO4c-W-3.5 98SY-TO4d-S-1 98SY-TO4e-S-1 98SY-TO4e-W-3.5 98SY-TO6a-S-2.5 98SY-TO6a-W-7 98SY-TO6b-S-2.5 98SY-TO6b-W-8.2

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-TO4a-W-12.1	Methylene chloride	0.6 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-PL1a-S-1.0 98SY-SS1m-S-6 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2 98SY-TO4a-S-6 98SY-TO4a-W-12.1 98SY-TO4b-S-1 98SY-TO4b-W-2 98SY-TO4c-S-1 98SY-TO4c-W-3.5 98SY-TO4d-S-1 98SY-TO4e-S-1 98SY-TO4e-W-3.5 98SY-TO6a-S-2.5 98SY-TO6a-W-7 98SY-TO6b-S-2.5 98SY-TO6b-W-8.2 98G2725-MB-02 98G2729-MB-02 98G2747-MB-02	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	None	P

Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-SW2j-S-14 and 98SY-SW2k-S-14 were identified as field duplicates. No volatiles were detected in any of the samples.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Flag	A or P	Reason
98-3365	98SY-BT1h-W-12.1 98SY-BT1i-W-10 98SY-PL1a-W-10 98SY-RE1d-W-14 98SY-SS1m-W-10	Tetrachloroethene n-Propylbenzene 1,3,5-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene p-Isopropyltoluene n-Butylbenzene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J J J J J J J J J J	A	Continuing calibration (%D)
98-3365	98SY-TO4a-W-12.1 98SY-TO4b-W-2 98SY-TO4c-W-3.5 98SY-TO4e-W-3.5 98SY-TO6a-W-7 98SY-TO6b-W-8.2	Methylene chloride	J	A	Continuing calibration (%D)
98-3365	98SY-PL1a-S-1.0 98SY-SS1m-S-6 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-TO4b-S-1 98SY-TO4c-S-1 98SY-TO4d-S-1 98SY-TO4e-S-1 98SY-TO6a-S-2.5	Bromomethane Trichlorofluoromethane 1,3,5-Trimethylbenzene Hexachlorobutadiene	J J J J	A	Continuing calibration (%D)
98-3365	98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2 98SY-TO4a-S-6 98SY-TO6b-S-2.5	Chloromethane Bromomethane Dibromomethane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Bromoform Hexachlorobutadiene	J J J J J J J	A	Continuing calibration (%D)

SDG	Sample	Compound	Flag	A or P	Reason
98-3365	98SY-PL1a-S-1.0 98SY-SS1m-S-6 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2 98SY-TO4a-S-6 98SY-TO4a-W-12.1 98SY-TO4b-S-1 98SY-TO4b-W-2 98SY-TO4c-S-1 98SY-TO4c-W-3.5 98SY-TO4d-S-1 98SY-TO4e-S-1 98SY-TO4e-W-3.5 98SY-TO6a-S-2.5 98SY-TO6a-W-7 98SY-TO6b-S-2.5 98SY-TO6b-W-8.2	All TCL compounds	None	P	Laboratory control samples

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Modified Final Concentration	A or P
98-3365	98SY-TO4a-W-12.1	Methylene chloride	5U ug/L	A

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-1	Received Date:	06/10/98
Sample ID:	**98SY-BT1H-W-12.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	19:34
Data File Name:	3365-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U UJ
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U UJ

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U UJ
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U UJ
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U UJ
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene,	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	101
2	Dibromofluoromethane	1868-53-7	86-117	96
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**95**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**102**
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-2	Received Date:	06/10/98
Sample ID:	**98SY-BT1I-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	20:13
Data File Name:	3365-02	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	1	J
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U UJ
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U UJ
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U UJ
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	103
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	105
4	Toluene-d8	2037-26-5	88-109	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	3114-55-4	50-200	98
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-3	Received Date:	06/10/98
Sample ID:	**98SY-PL1A-S-1.0**	Sample Matrix	Soil	Moisture %:	2.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	01:04
Data File Name:	3365-03	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.1	< 5.1	U
2	Bromobenzene	108-86-1	µg/kg	5.1	< 5.1	U
3	Bromochloromethane	74-97-5	µg/kg	5.1	< 5.1	U
4	Bromodichloromethane	75-27-4	µg/kg	5.1	< 5.1	U
5	Bromoform	75-25-2	µg/kg	5.1	< 5.1	U
6	Bromomethane	74-83-9	µg/kg	5.1	< 5.1	U
7	n-Butylbenzene	104-51-8	µg/kg	5.1	< 5.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.1	< 5.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.1	< 5.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.1	< 5.1	U
11	Chlorobenzene	108-90-7	µg/kg	5.1	< 5.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.1	< 5.1	U
13	Chloroethane	75-00-3	µg/kg	5.1	< 5.1	U
14	Chloroform	67-66-3	µg/kg	5.1	< 5.1	U
15	Chloromethane	74-87-3	µg/kg	5.1	< 5.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.1	< 5.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.1	< 5.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.1	< 5.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.1	< 5.1	U
20	Dibromomethane	74-95-3	µg/kg	5.1	< 5.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.1	< 5.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.1	< 5.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.1	< 5.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.1	< 5.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.1	< 5.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.1	< 5.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.1	< 5.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.1	< 5.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.1	< 5.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.1	< 5.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.1	< 5.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.1	< 5.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.1	< 5.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.1	< 5.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.1	< 5.1	U
36	Ethylbenzene	100-41-4	µg/kg	5.1	< 5.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.1	< 5.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.1	< 5.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.1	< 5.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.1	< 5.1	U
41	Naphthalene	91-20-3	µg/kg	5.1	< 5.1	U
42	n-Propyibenzene	103-65-1	µg/kg	5.1	< 5.1	U
43	Styrene	100-42-5	µg/kg	5.1	< 5.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.1	< 5.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.1	< 5.1	U
46	Tetrachloroethene	127-18-4	µg/kg	5.1	< 5.1	U
47	Toluene	108-88-3	µg/kg	5.1	< 5.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.1	< 5.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.1	< 5.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.1	< 5.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.1	< 5.1	U
52	Trichloroethene	79-01-6	µg/kg	5.1	< 5.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.1	< 5.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.1	< 5.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.1	< 5.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.1	< 5.1	U
57	Vinyl chloride	75-01-4	µg/kg	5.1	< 5.1	U
58	o-Xylene	95-47-6	µg/kg	5.1	< 5.1	U
59	m/p-Xylene	108-38-3	µg/kg	5.1	< 5.1	U
60	Xylenes (total)	1330-20-7	µg/kg	5.1	< 5.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	113
2	Dibromofluoromethane	1868-53-7	80-119	96
3	1,2-Dichloroethane-d4	17060-07-0	80-119	97
4	Toluene-d8	2037-26-5	81-116	90
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**76**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**61**
3	Fluorobenzene	462-06-6	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-4	Received Date:	06/10/98
Sample ID:	98SY-PL1A-W-10	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	20:51
Data File Name:	3365-04	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U UJ
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	19	
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	11	
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	26	
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	2	J
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U UJ

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	UJ
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	UJ
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	UJ
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	UJ
57	Vinyl chloride	75-01-4	µg/L	5	9	
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	104
2	Dibromofluoromethane	1868-53-7	86-117	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	114
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**98**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**107**
3	**Fluorobenzene**	**462-06-6**	**50-200**	**99**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-5	Received Date:	06/10/98
Sample ID:	**98SY-RE1D-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	21:29
Data File Name:	3365-05	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.					
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U UJ
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U UJ

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U UJ
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U UJ
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U UJ
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U UJ
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	101
2	Dibromofluoromethane	1868-53-7	86-117	97
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	3114-55-4	50-200	97
2	**1,4-Dichlorobenzene-d4**	3855-82-1	50-200	103
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12558

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-6	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-S-6**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	01:31
Data File Name:	3365-06	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

012561

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	~~U~~ UJ
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	84-120	109
2	Dibromofluoromethane	1868-53-7	80-119	95
3	1,2-Dichloroethane-d4	17060-07-0	80-119	97
4	Toluene-d8	2037-26-5	81-116	88
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**79**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**68**
3	**Fluorobenzene**	462-06-6	**50-200**	**87**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12562

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-7	Received Date:	06/10/98
Sample ID:	98SY-SS1M-W-10	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	22:08
Data File Name:	3365-07	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

012565

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U UJ
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U UJ
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U UJ
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	112
2	Dibromofluoromethane	1868-53-7	86-117	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	90
3	Fluorobenzene	462-06-6	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-9	Received Date:	06/10/98
Sample ID:	98SY-SW2H-S-26	Sample Matrix	Soil	Moisture %:	26.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	06:31
Data File Name:	3365-09A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.8	<6.8	U
2	Bromobenzene	108-86-1	µg/kg	6.8	<6.8	U
3	Bromochloromethane	74-97-5	µg/kg	6.8	<6.8	U
4	Bromodichloromethane	75-27-4	µg/kg	6.8	<6.8	U
5	Bromoform	75-25-2	µg/kg	6.8	<6.8	U
6	Bromomethane	74-83-9	µg/kg	6.8	<6.8	R UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.8	<6.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.8	<6.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.8	<6.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.8	<6.8	U
11	Chlorobenzene	108-90-7	µg/kg	6.8	<6.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.8	<6.8	U
13	Chloroethane	75-00-3	µg/kg	6.8	<6.8	U
14	Chloroform	67-66-3	µg/kg	6.8	<6.8	U
15	Chloromethane	74-87-3	µg/kg	6.8	<6.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.8	<6.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.8	<6.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.8	<6.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.8	<6.8	U
20	Dibromomethane	74-95-3	µg/kg	6.8	<6.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.8	<6.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.8	<6.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.8	<6.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.8	<6.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.8	<6.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.8	<6.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.8	<6.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.8	<6.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.8	<6.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.8	<6.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.8	<6.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.8	<6.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.8	<6.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.8	<6.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.8	<6.8	U
36	Ethylbenzene	100-41-4	µg/kg	6.8	<6.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.8	<6.8	R UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.8	<6.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.8	<6.8	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.8	< 6.8	U
41	Naphthalene	91-20-3	µg/kg	6.8	< 6.8	U
42	n-Propylbenzene	103-65-1	µg/kg	6.8	< 6.8	U
43	Styrene	100-42-5	µg/kg	6.8	< 6.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.8	< 6.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.8	< 6.8	U
46	Tetrachloroethene	127-18-4	µg/kg	6.8	< 6.8	U
47	Toluene	108-88-3	µg/kg	6.8	< 6.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.8	< 6.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.8	< 6.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.8	< 6.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.8	< 6.8	U
52	Trichloroethene	79-01-6	µg/kg	6.8	< 6.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.8	< 6.8	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.8	< 6.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.8	< 6.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.8	< 6.8	~~U~~ UJ
57	Vinyl chloride	75-01-4	µg/kg	6.8	< 6.8	U
58	o-Xylene	95-47-6	µg/kg	6.8	< 6.8	U
59	m/p-Xylene	108-38-3	µg/kg	6.8	< 6.8	U
60	Xylenes (total)	1330-20-7	µg/kg	6.8	< 6.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	102
3	1,2-Dichloroethane-d4	17060-07-0	80-119	99
4	Toluene-d8	2037-26-5	81-116	84
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	3114-55-4	50-200	81
2	**1,4-Dichlorobenzene-d4**	3855-82-1	50-200	71
3	Fluorobenzene	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C012570

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-10	Received Date:	06/10/98
Sample ID:	**98SY-SW2I-S-20**	Sample Matrix	Soil	Moisture %:	21.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	06:58
Data File Name:	3365-10A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.4	<6.4	U
2	Bromobenzene	108-86-1	µg/kg	6.4	<6.4	U
3	Bromochloromethane	74-97-5	µg/kg	6.4	<6.4	U
4	Bromodichloromethane	75-27-4	µg/kg	6.4	<6.4	U
5	Bromoform	75-25-2	µg/kg	6.4	<6.4	U
6	Bromomethane	74-83-9	µg/kg	6.4	<6.4	UX UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.4	<6.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.4	<6.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.4	<6.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.4	<6.4	U
11	Chlorobenzene	108-90-7	µg/kg	6.4	<6.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.4	<6.4	U
13	Chloroethane	75-00-3	µg/kg	6.4	<6.4	U
14	Chloroform	67-66-3	µg/kg	6.4	<6.4	U
15	Chloromethane	74-87-3	µg/kg	6.4	<6.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.4	<6.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.4	<6.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.4	<6.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.4	<6.4	U
20	Dibromomethane	74-95-3	µg/kg	6.4	<6.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.4	<6.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.4	<6.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.4	<6.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.4	<6.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.4	<6.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.4	<6.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.4	<6.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.4	<6.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.4	<6.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.4	<6.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.4	<6.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.4	<6.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.4	<6.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.4	<6.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.4	<6.4	U
36	Ethylbenzene	100-41-4	µg/kg	6.4	<6.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.4	<6.4	X UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.4	<6.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.4	<6.4	U

012573

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.4	<6.4	U
41	Naphthalene	91-20-3	µg/kg	6.4	<6.4	U
42	n-Propylbenzene	103-65-1	µg/kg	6.4	<6.4	U
43	Styrene	100-42-5	µg/kg	6.4	<6.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.4	<6.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.4	<6.4	U
46	Tetrachloroethene	127-18-4	µg/kg	6.4	<6.4	U
47	Toluene	108-88-3	µg/kg	6.4	<6.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.4	<6.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.4	<6.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.4	<6.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.4	<6.4	U
52	Trichloroethene	79-01-6	µg/kg	6.4	<6.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.4	<6.4	UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.4	<6.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.4	<6.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.4	<6.4	UJ
57	Vinyl chloride	75-01-4	µg/kg	6.4	<6.4	U
58	o-Xylene	95-47-6	µg/kg	6.4	<6.4	U
59	m/p-Xylene	108-38-3	µg/kg	6.4	<6.4	U
60	Xylenes (total)	1330-20-7	µg/kg	6.4	<6.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	105
2	Dibromofluoromethane	1868-53-7	80-119	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	100
4	Toluene-d8	2037-26-5	81-116	86
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**74**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**66**
3	**Fluorobenzene**	462-06-6	**50-200**	**78**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	07:25
Data File Name:	3365-11A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.4	< 6.4	U
2	Bromobenzene	108-86-1	µg/kg	6.4	< 6.4	U
3	Bromochloromethane	74-97-5	µg/kg	6.4	< 6.4	U
4	Bromodichloromethane	75-27-4	µg/kg	6.4	< 6.4	U
5	Bromoform	75-25-2	µg/kg	6.4	< 6.4	U
6	Bromomethane	74-83-9	µg/kg	6.4	< 6.4	UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.4	< 6.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.4	< 6.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.4	< 6.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.4	< 6.4	U
11	Chlorobenzene	108-90-7	µg/kg	6.4	< 6.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.4	< 6.4	U
13	Chloroethane	75-00-3	µg/kg	6.4	< 6.4	U
14	Chloroform	67-66-3	µg/kg	6.4	< 6.4	U
15	Chloromethane	74-87-3	µg/kg	6.4	< 6.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.4	< 6.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.4	< 6.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.4	< 6.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.4	< 6.4	U
20	Dibromomethane	74-95-3	µg/kg	6.4	< 6.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.4	< 6.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.4	< 6.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.4	< 6.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.4	< 6.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.4	< 6.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.4	< 6.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.4	< 6.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.4	< 6.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.4	< 6.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.4	< 6.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.4	< 6.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.4	< 6.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.4	< 6.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.4	< 6.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.4	< 6.4	U
36	Ethylbenzene	100-41-4	µg/kg	6.4	< 6.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.4	< 6.4	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.4	< 6.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.4	< 6.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.4	< 6.4	U
41	Naphthalene	91-20-3	µg/kg	6.4	< 6.4	U
42	n-Propylbenzene	103-65-1	µg/kg	6.4	< 6.4	U
43	Styrene	100-42-5	µg/kg	6.4	< 6.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.4	< 6.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.4	< 6.4	U
46	Tetrachloroethene	127-18-4	µg/kg	6.4	< 6.4	U
47	Toluene	108-88-3	µg/kg	6.4	< 6.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.4	< 6.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.4	< 6.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.4	< 6.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.4	< 6.4	U
52	Trichloroethene	79-01-6	µg/kg	6.4	< 6.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.4	< 6.4	X UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.4	< 6.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.4	< 6.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.4	< 6.4	X UJ
57	Vinyl chloride	75-01-4	µg/kg	6.4	< 6.4	U
58	o-Xylene	95-47-6	µg/kg	6.4	< 6.4	U
59	m/p-Xylene	108-38-3	µg/kg	6.4	< 6.4	U
60	Xylenes (total)	1330-20-7	µg/kg	6.4	< 6.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	84-120	112
2	Dibromofluoromethane	1868-53-7	80-119	108
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	81-116	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	76
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
3	Fluorobenzene	462-06-6	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	02:48
Data File Name:	3365-12A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.3	< 6.3	U
2	Bromobenzene	108-86-1	µg/kg	6.3	< 6.3	U
3	Bromochloromethane	74-97-5	µg/kg	6.3	< 6.3	U
4	Bromodichloromethane	75-27-4	µg/kg	6.3	< 6.3	U
5	Bromoform	75-25-2	µg/kg	6.3	< 6.3	UJ
6	Bromomethane	74-83-9	µg/kg	6.3	< 6.3	UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.3	< 6.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.3	< 6.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.3	< 6.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.3	< 6.3	U
11	Chlorobenzene	108-90-7	µg/kg	6.3	< 6.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.3	< 6.3	U
13	Chloroethane	75-00-3	µg/kg	6.3	< 6.3	U
14	Chloroform	67-66-3	µg/kg	6.3	< 6.3	U
15	Chloromethane	74-87-3	µg/kg	6.3	< 6.3	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	6.3	< 6.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.3	< 6.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.3	< 6.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.3	< 6.3	U
20	Dibromomethane	74-95-3	µg/kg	6.3	< 6.3	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.3	< 6.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.3	< 6.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.3	< 6.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.3	< 6.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.3	< 6.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.3	< 6.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.3	< 6.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.3	< 6.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.3	< 6.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.3	< 6.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.3	< 6.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.3	< 6.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.3	< 6.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.3	< 6.3	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.3	< 6.3	UJ
36	Ethylbenzene	100-41-4	µg/kg	6.3	< 6.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.3	< 6.3	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.3	< 6.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.3	< 6.3	U

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=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.3	<6.3	U
41	Naphthalene	91-20-3	µg/kg	6.3	<6.3	U
42	n-Propylbenzene	103-65-1	µg/kg	6.3	<6.3	U
43	Styrene	100-42-5	µg/kg	6.3	<6.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.3	<6.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.3	<6.3	U
46	Tetrachloroethene	127-18-4	µg/kg	6.3	<6.3	U
47	Toluene	108-88-3	µg/kg	6.3	<6.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.3	<6.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.3	<6.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.3	<6.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.3	<6.3	U
52	Trichloroethene	79-01-6	µg/kg	6.3	<6.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.3	<6.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.3	<6.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.3	<6.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.3	<6.3	U
57	Vinyl chloride	75-01-4	µg/kg	6.3	<6.3	U
58	o-Xylene	95-47-6	µg/kg	6.3	<6.3	U
59	m/p-Xylene	108-38-3	µg/kg	6.3	<6.3	U
60	Xylenes (total)	1330-20-7	µg/kg	6.3	<6.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	106
2	Dibromofluoromethane	1868-53-7	80-119	106
3	1,2-Dichloroethane-d4	17060-07-0	80-119	98
4	Toluene-d8	2037-26-5	81-116	82
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
3	Fluorobenzene	462-06-6	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13	Received Date:	06/10/98
Sample ID:	98SY-SW4A-S-2	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	03:15
Data File Name:	3365-13A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	8.6	< 8.6	U
2	Bromobenzene	108-86-1	µg/kg	8.6	< 8.6	U
3	Bromochloromethane	74-97-5	µg/kg	8.6	< 8.6	U
4	Bromodichloromethane	75-27-4	µg/kg	8.6	< 8.6	U
5	Bromoform	75-25-2	µg/kg	8.6	< 8.6	X UJ
6	Bromomethane	74-83-9	µg/kg	8.6	< 8.6	X UJ
7	n-Butylbenzene	104-51-8	µg/kg	8.6	< 8.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	8.6	< 8.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	8.6	< 8.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	8.6	< 8.6	U
11	Chlorobenzene	108-90-7	µg/kg	8.6	< 8.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	8.6	< 8.6	U
13	Chloroethane	75-00-3	µg/kg	8.6	< 8.6	U
14	Chloroform	67-66-3	µg/kg	8.6	< 8.6	U
15	Chloromethane	74-87-3	µg/kg	8.6	< 8.6	X UJ
16	2-Chlorotoluene	95-49-8	µg/kg	8.6	< 8.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	8.6	< 8.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	8.6	< 8.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	8.6	< 8.6	U
20	Dibromomethane	74-95-3	µg/kg	8.6	< 8.6	X UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	8.6	< 8.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	8.6	< 8.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	8.6	< 8.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	8.6	< 8.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	8.6	< 8.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	8.6	< 8.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	8.6	< 8.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	8.6	< 8.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	8.6	< 8.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	8.6	< 8.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	8.6	< 8.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	8.6	< 8.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	8.6	< 8.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	8.6	< 8.6	X UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	8.6	< 8.6	X UJ
36	Ethylbenzene	100-41-4	µg/kg	8.6	< 8.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	8.6	< 8.6	X UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	8.6	< 8.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	8.6	< 8.6	U

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#	Component Name	CAS No.	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	8.6	<8.6	U
41	Naphthalene	91-20-3	µg/kg	8.6	<8.6	U
42	n-Propylbenzene	103-65-1	µg/kg	8.6	<8.6	U
43	Styrene	100-42-5	µg/kg	8.6	<8.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	8.6	<8.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	8.6	<8.6	U
46	Tetrachloroethene	127-18-4	µg/kg	8.6	<8.6	U
47	Toluene	108-88-3	µg/kg	8.6	<8.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	8.6	<8.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	8.6	<8.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	8.6	<8.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	8.6	<8.6	U
52	Trichloroethene	79-01-6	µg/kg	8.6	<8.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	8.6	<8.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	8.6	<8.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	8.6	<8.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	8.6	<8.6	U
57	Vinyl chloride	75-01-4	µg/kg	8.6	<8.6	U
58	o-Xylene	95-47-6	µg/kg	8.6	<8.6	U
59	m/p-Xylene	108-38-3	µg/kg	8.6	<8.6	U
60	Xylenes (total)	1330-20-7	µg/kg	8.6	<8.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	84-120	101
2	Dibromofluoromethane	1868-53-7	80-119	108
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	3114-55-4	50-200	101
2	**1,4-Dichlorobenzene-d4**	3855-82-1	50-200	87
3	Fluorobenzene	462-06-6	50-200	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

01258

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14	Received Date:	06/10/98
Sample ID:	98SY-SW5A-S-2	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	03:42
Data File Name:	3365-14A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.7	<6.7	U
2	Bromobenzene	108-86-1	µg/kg	6.7	<6.7	U
3	Bromochloromethane	74-97-5	µg/kg	6.7	<6.7	U
4	Bromodichloromethane	75-27-4	µg/kg	6.7	<6.7	U
5	Bromoform	75-25-2	µg/kg	6.7	<6.7	X UJ
6	Bromomethane	74-83-9	µg/kg	6.7	<6.7	X UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.7	<6.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.7	<6.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.7	<6.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.7	<6.7	U
11	Chlorobenzene	108-90-7	µg/kg	6.7	<6.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.7	<6.7	U
13	Chloroethane	75-00-3	µg/kg	6.7	<6.7	U
14	Chloroform	67-66-3	µg/kg	6.7	<6.7	U
15	Chloromethane	74-87-3	µg/kg	6.7	<6.7	X UJ
16	2-Chlorotoluene	95-49-8	µg/kg	6.7	<6.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.7	<6.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.7	<6.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.7	<6.7	U
20	Dibromomethane	74-95-3	µg/kg	6.7	<6.7	X UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.7	<6.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.7	<6.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.7	<6.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.7	<6.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.7	<6.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.7	<6.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.7	<6.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.7	<6.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.7	<6.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.7	<6.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.7	<6.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.7	<6.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.7	<6.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.7	<6.7	X UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.7	<6.7	X UJ
36	Ethylbenzene	100-41-4	µg/kg	6.7	<6.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.7	<6.7	X UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.7	<6.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.7	<6.7	U

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=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.7	< 6.7	U
41	Naphthalene	91-20-3	µg/kg	6.7	< 6.7	U
42	n-Propylbenzene	103-65-1	µg/kg	6.7	< 6.7	U
43	Styrene	100-42-5	µg/kg	6.7	< 6.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.7	< 6.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.7	< 6.7	U
46	Tetrachloroethene	127-18-4	µg/kg	6.7	< 6.7	U
47	Toluene	108-88-3	µg/kg	6.7	< 6.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.7	< 6.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.7	< 6.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.7	< 6.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.7	< 6.7	U
52	Trichloroethene	79-01-6	µg/kg	6.7	< 6.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.7	< 6.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.7	< 6.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.7	< 6.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.7	< 6.7	U
57	Vinyl chloride	75-01-4	µg/kg	6.7	< 6.7	U
58	o-Xylene	95-47-6	µg/kg	6.7	< 6.7	U
59	m/p-Xylene	108-38-3	µg/kg	6.7	< 6.7	U
60	Xylenes (total)	1330-20-7	µg/kg	6.7	< 6.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	107
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	81-116	82
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**94**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**77**
3	Fluorobenzene	462-06-6	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-15	Received Date:	06/10/98
Sample ID:	**98SY-T04A-S-6**	Sample Matrix	Soil	Moisture %:	19.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	04:10
Data File Name:	3365-15A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.2	<6.2	U
2	Bromobenzene	108-86-1	µg/kg	6.2	<6.2	U
3	Bromochloromethane	74-97-5	µg/kg	6.2	<6.2	U
4	Bromodichloromethane	75-27-4	µg/kg	6.2	<6.2	U
5	Bromoform	75-25-2	µg/kg	6.2	<6.2	X UJ
6	Bromomethane	74-83-9	µg/kg	6.2	<6.2	X UJ
7	n-Butylbenzene	104-51-8	µg/kg	6.2	<6.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.2	<6.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.2	<6.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.2	<6.2	U
11	Chlorobenzene	108-90-7	µg/kg	6.2	<6.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.2	<6.2	U
13	Chloroethane	75-00-3	µg/kg	6.2	<6.2	U
14	Chloroform	67-66-3	µg/kg	6.2	<6.2	U
15	Chloromethane	74-87-3	µg/kg	6.2	<6.2	X UJ
16	2-Chlorotoluene	95-49-8	µg/kg	6.2	<6.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.2	<6.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.2	<6.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.2	<6.2	U
20	Dibromomethane	74-95-3	µg/kg	6.2	<6.2	X UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.2	<6.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.2	<6.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.2	<6.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.2	<6.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.2	<6.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.2	<6.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.2	<6.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.2	<6.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.2	<6.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.2	<6.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.2	<6.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.2	<6.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.2	<6.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.2	<6.2	X UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.2	<6.2	X UJ
36	Ethylbenzene	100-41-4	µg/kg	6.2	<6.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.2	<6.2	X UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.2	<6.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.2	<6.2	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.2	<6.2	U
41	Naphthalene	91-20-3	µg/kg	6.2	<6.2	U
42	n-Propylbenzene	103-65-1	µg/kg	6.2	<6.2	U
43	Styrene	100-42-5	µg/kg	6.2	<6.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.2	<6.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.2	<6.2	U
46	Tetrachloroethene	127-18-4	µg/kg	6.2	<6.2	U
47	Toluene	108-88-3	µg/kg	6.2	<6.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.2	<6.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.2	<6.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.2	<6.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.2	<6.2	U
52	Trichloroethene	79-01-6	µg/kg	6.2	<6.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.2	<6.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.2	<6.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.2	<6.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.2	<6.2	U
57	Vinyl chloride	75-01-4	µg/kg	6.2	<6.2	U
58	o-Xylene	95-47-6	µg/kg	6.2	<6.2	U
59	m/p-Xylene	108-38-3	µg/kg	6.2	<6.2	U
60	Xylenes (total)	1330-20-7	µg/kg	6.2	<6.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	112
2	Dibromofluoromethane	1868-53-7	80-119	112
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	81-116	83
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**86**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**71**
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012594

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-16	Received Date:	06/10/98
Sample ID:	**98SY-T04A-W-12.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	03:14
Data File Name:	3365-16	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	0.6	J 5UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	0.3	J
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	104
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	116
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**97**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**104**
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-17	Received Date:	06/10/98
Sample ID:	98SY-T04B-S-1	Sample Matrix	Soil	Moisture %:	14.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	02:25
Data File Name:	3365-17	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	U
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	U
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

012604

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	< 5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	< 5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	< 5.8	U
43	Styrene	100-42-5	µg/kg	5.8	< 5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	< 5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	< 5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	< 5.8	U
47	Toluene	108-88-3	µg/kg	5.8	< 5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	< 5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	< 5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	< 5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	< 5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	< 5.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	< 5.8	X UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	< 5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	< 5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	< 5.8	X UJ
57	Vinyl chloride	75-01-4	µg/kg	5.8	< 5.8	U
58	o-Xylene	95-47-6	µg/kg	5.8	< 5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	< 5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	< 5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	111
2	Dibromofluoromethane	1868-53-7	80-119	81
3	1,2-Dichloroethane-d4	17060-07-0	80-119	95
4	Toluene-d8	2037-26-5	81-116	83
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	75
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	57
3	Fluorobenzene	462-06-6	50-200	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012605

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-18	Received Date:	06/10/98
Sample ID:	**98SY-T04B-W-2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	03:53
Data File Name:	3365-18	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	107
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	115
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**93**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**99**
3	**Fluorobenzene**	462-06-6	**50-200**	**98**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-19	Received Date:	06/10/98
Sample ID:	98SY-T04C-S-1	Sample Matrix	Soil	Moisture %:	9.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	02:52
Data File Name:	3365-19	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1.2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
10	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
11	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
12	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
13	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
14	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
15	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
16	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
17	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
18	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
19	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	~~U~~ UJ
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1 4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	106
2 Dibromofluoromethane	1868-53-7	80-119	90
3 1,2-Dichloroethane-d4	17060-07-0	80-119	95
4 Toluene-d8	2037-26-5	81-116	84
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1 **Chlorobenzene-d5**	3114-55-4	50-200	76
2 1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
3 Fluorobenzene	462-06-6	50-200	83
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C012613

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-20	Received Date:	06/10/98
Sample ID:	**98SY-T04C-W-3.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	04:32
Data File Name:	3365-20	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	86-114	112
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	114
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**91**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**94**
3	**Fluorobenzene**	**462-06-6**	**50-200**	**98**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-21	Received Date:	06/10/98
Sample ID:	**98SY-T04D-S-1**	Sample Matrix	Soil	Moisture %:	13.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	03:20
Data File Name:	3365-21	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	U
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	U
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	< 5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	< 5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	< 5.8	U
43	Styrene	100-42-5	µg/kg	5.8	< 5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	< 5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	< 5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	< 5.8	U
47	Toluene	108-88-3	µg/kg	5.8	< 5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	< 5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	< 5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	< 5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	< 5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	< 5.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	< 5.8	X UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	< 5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	< 5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	< 5.8	X UJ
57	Vinyl chloride	75-01-4	µg/kg	5.8	< 5.8	U
58	o-Xylene	95-47-6	µg/kg	5.8	< 5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	< 5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	< 5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	108
2	Dibromofluoromethane	1868-53-7	80-119	89
3	1,2-Dichloroethane-d4	17060-07-0	80-119	94
4	Toluene-d8	2037-26-5	81-116	85
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	78
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	66
3	**Fluorobenzene**	462-06-6	**50-200**	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-22	Received Date:	06/10/98
Sample ID:	98SY-T04E-S-1	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	03:47
Data File Name:	3365-22	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	<5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	<5.7	U
42	n-Propylbenzene	103-65-1	µg/kg	5.7	<5.7	U
43	Styrene	100-42-5	µg/kg	5.7	<5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	<5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	<5.7	U
46	Tetrachloroethene	127-18-4	µg/kg	5.7	<5.7	U
47	Toluene	108-88-3	µg/kg	5.7	<5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	<5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	<5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	<5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	<5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	<5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	<5.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	<5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	<5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	<5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	<5.7	U
58	o-Xylene	95-47-6	µg/kg	5.7	<5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	<5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	<5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	160-00-4	84-120	112
2	Dibromofluoromethane	1868-53-7	80-119	93
3	1,2-Dichloroethane-d4	17060-07-0	80-119	98
4	Toluene-d8	2037-26-5	81-116	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	73
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	55
3	Fluorobenzene	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12625

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-23	Received Date:	06/10/98
Sample ID:	**98SY-T04E-W-3.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	05:10
Data File Name:	3365-23	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propyibenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetracnioroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4- Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	101
2	Dibromofluoromethane	1868-53-7	86-117	96
3	1,2-Dichloroethane-d4	17060-07-0	80-119	109
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**95**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**103**
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-24	Received Date:	06/10/98
Sample ID:	**98SY-T06A-S-2.5**	Sample Matrix	Soil	Moisture %:	19.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2729	Prep. No:	-	Anal. Time:	04:14
Data File Name:	3365-24	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.2	<6.2	U
2	Bromobenzene	108-86-1	µg/kg	6.2	<6.2	U
3	Bromochloromethane	74-97-5	µg/kg	6.2	<6.2	U
4	Bromodichloromethane	75-27-4	µg/kg	6.2	<6.2	U
5	Bromoform	75-25-2	µg/kg	6.2	<6.2	U
6	Bromomethane	74-83-9	µg/kg	6.2	<6.2	U
7	n-Butylbenzene	104-51-8	µg/kg	6.2	<6.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.2	<6.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.2	<6.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.2	<6.2	U
11	Chlorobenzene	108-90-7	µg/kg	6.2	<6.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.2	<6.2	U
13	Chloroethane	75-00-3	µg/kg	6.2	<6.2	U
14	Chloroform	67-66-3	µg/kg	6.2	<6.2	U
15	Chloromethane	74-87-3	µg/kg	6.2	<6.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.2	<6.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.2	<6.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.2	<6.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.2	<6.2	U
20	Dibromomethane	74-95-3	µg/kg	6.2	<6.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.2	<6.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.2	<6.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.2	<6.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.2	<6.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.2	<6.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.2	<6.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.2	<6.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.2	<6.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.2	<6.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.2	<6.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.2	<6.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.2	<6.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.2	<6.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.2	<6.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.2	<6.2	U
36	Ethylbenzene	100-41-4	µg/kg	6.2	<6.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.2	<6.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.2	<6.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.2	<6.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.2	<6.2	U
41	Naphthalene	91-20-3	µg/kg	6.2	<6.2	U
42	n-Propylbenzene	103-65-1	µg/kg	6.2	<6.2	U
43	Styrene	100-42-5	µg/kg	6.2	<6.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.2	<6.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.2	<6.2	U
46	Tetrachloroethene	127-18-4	µg/kg	6.2	<6.2	U
47	Toluene	108-88-3	µg/kg	6.2	<6.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.2	<6.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.2	<6.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.2	<6.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.2	<6.2	U
52	Trichloroethene	79-01-6	µg/kg	6.2	<6.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.2	<6.2	UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.2	<6.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.2	<6.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.2	<6.2	UJ
57	Vinyl chloride	75-01-4	µg/kg	6.2	<6.2	U
58	o-Xylene	95-47-6	µg/kg	6.2	<6.2	U
59	m/p-Xylene	108-38-3	µg/kg	6.2	<6.2	U
60	Xylenes (total)	1330-20-7	µg/kg	6.2	<6.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	116
2	Dibromofluoromethane	1868-53-7	80-119	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	98
4	Toluene-d8	2037-26-5	81-116	88
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	3114-55-4	**50-200**	**69**
2	**1,4-Dichlorobenzene-d4**	3855-82-1	**50-200**	**52**
3	Fluorobenzene	462-06-6	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-25	Received Date:	06/10/98
Sample ID:	**98SY-T06A-W-7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	05:48
Data File Name:	3365-25	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	104
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	114
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			**Control Limit, %**	**IS Rec.%**
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**95**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**103**
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-27	Received Date:	06/10/98
Sample ID:	98SY-TO6B-S-2.5	Sample Matrix	Soil	Moisture %:	1.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	04:37
Data File Name:	3365-27A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.1	< 5.1	U
2	Bromobenzene	108-86-1	µg/kg	5.1	< 5.1	U
3	Bromochloromethane	74-97-5	µg/kg	5.1	< 5.1	U
4	Bromodichloromethane	75-27-4	µg/kg	5.1	< 5.1	U
5	Bromoform	75-25-2	µg/kg	5.1	< 5.1	U UJ
6	Bromomethane	74-83-9	µg/kg	5.1	< 5.1	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.1	< 5.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.1	< 5.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.1	< 5.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.1	< 5.1	U
11	Chlorobenzene	108-90-7	µg/kg	5.1	< 5.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.1	< 5.1	U
13	Chloroethane	75-00-3	µg/kg	5.1	< 5.1	U
14	Chloroform	67-66-3	µg/kg	5.1	< 5.1	U
15	Chloromethane	74-87-3	µg/kg	5.1	< 5.1	U UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.1	< 5.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.1	< 5.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.1	< 5.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.1	< 5.1	U
20	Dibromomethane	74-95-3	µg/kg	5.1	< 5.1	U UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.1	< 5.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.1	< 5.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.1	< 5.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.1	< 5.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.1	< 5.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.1	< 5.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.1	< 5.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.1	< 5.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.1	< 5.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.1	< 5.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.1	< 5.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.1	< 5.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.1	< 5.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.1	< 5.1	U UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.1	< 5.1	U UJ
36	Ethylbenzene	100-41-4	µg/kg	5.1	< 5.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.1	< 5.1	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.1	< 5.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.1	< 5.1	U

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=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.1	< 5.1	U
41	Naphthalene	91-20-3	µg/kg	5.1	< 5.1	U
42	n-Propylbenzene	103-65-1	µg/kg	5.1	< 5.1	U
43	Styrene	100-42-5	µg/kg	5.1	< 5.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.1	< 5.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.1	< 5.1	U
46	Tetrachloroethene	127-18-4	µg/kg	5.1	< 5.1	U
47	Toluene	108-88-3	µg/kg	5.1	< 5.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.1	< 5.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.1	< 5.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.1	< 5.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.1	< 5.1	U
52	Trichloroethene	79-01-6	µg/kg	5.1	< 5.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.1	< 5.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.1	< 5.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.1	< 5.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.1	< 5.1	U
57	Vinyl chloride	75-01-4	µg/kg	5.1	< 5.1	U
58	o-Xylene	95-47-6	µg/kg	5.1	< 5.1	U
59	m/p-Xylene	108-38-3	µg/kg	5.1	< 5.1	U
60	Xylenes (total)	1330-20-7	µg/kg	5.1	< 5.1	U

Surrogates		Control Limit, %	Surro. Rec.%
1 4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	106
2 Dibromofluoromethane	1868-53-7	80-119	110
3 1,2-Dichloroethane-d4	17060-07-0	80-119	108
4 Toluene-d8	2037-26-5	81-116	84
# of out-of-control			0

Internal Standard		**Control Limit, %**	**IS Rec.%**
1 **Chlorobenzene-d5**	**3114-55-4**	**50-200**	**83**
2 **1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**70**
3 Fluorobenzene	462-06-6	50-200	91
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012641

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-28	Received Date:	06/10/98
Sample ID:	**98SY-TO6B-W-8.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2725	Prep. No:	-	Anal. Time:	06:27
Data File Name:	3365-28	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	114
2	Dibromofluoromethane	1868-53-7	86-117	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	115
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	**Chlorobenzene-d5**	**3114-55-4**	**50-200**	**89**
2	**1,4-Dichlorobenzene-d4**	**3855-82-1**	**50-200**	**79**
3	**Fluorobenzene**	462-06-6	**50-200**	**94**
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012645

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 10, 1998

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-RE1d-W-14
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SS2g-S-17
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2j-S-14RE
98SY-SW2k-S-14
98SY-SW2k-S-14RE
98SY-SW4a-S-2**
98SY-SW4a-S-2RE**
98SY-SW5a-S-2
98SY-SW5a-S-2RE
98SY-SS1m-S-6MS
98SY-SS1m-S-6MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 14 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
98SY-SW2h-S-26**	15	14	J	P
98SY-SW4a-S-2**	15	14	J	P
98SY-SW4a-S-2RE**	15	14	J	P
98SY-SS1m-S-6	15	14	J	P
98SY-SS2g-S-17	15	14	J	P
98SY-SW2i-S-20	15	14	J	P
98SY-SW2j-S-14	15	14	J	P
98SY-SW2j-S-14RE	15	14	J	P
98SY-SW2k-S-14	15	14	J	P
98SY-SW2k-S-14RE	15	14	J	P
98SY-SW5a-S-2	15	14	J	P
98SY-SW5a-S-2RE	15	14	J	P
98SY-SS1m-S-6MS	15	14	J	P
98SY-SS1m-S-6MSD	15	14	J	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within QC limits with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/27/98	Bis(2-chloroethyl) ether	33.0	98SY-SS1m-S-6 98SY-SS1m-S-6MS 98SY-SS1m-S-6MSD 98G2840-MB-01	J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
98SY-SW2j-S-14	Perylene-d12	113085 (120943-483774)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-SW2k-S-14	Perylene-d12	101149 (120943-483774))	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-SW4a-S-2**	Perylene-d12	89924 (120943-483774)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-SW4a-S-2RE**	Perylene-d12	131302 (136258-545032)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-SW5a-S-2	Perylene-d12	129106 (136258-545032)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2RE** 98SY-SW5a-S-2	All TCL compounds	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-SW2j-S-14 and 98SY-SW2k-S-14 and samples 98SY-SW2j-S-14RE and 98SY-SW2k-S-14RE were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-SW2j-S-14	98SY-SW2k-S-14			
Benzo(b)fluoranthene 17	890	5000U	200 (≤35)	J	A
Bis(2-ethylhexyl)phthalate 16	1500	5000U	200 (≤35)	J	A
Chrysene 4	900	5000U	200 (≤35)	J	A
Fluoranthene 15	1800	5000U	200 (≤35)	J	A
Phenanthrene 13	1300	5000U	200 (≤35)	J	A
Pyrene 14	1500	5000U	200 (≤35)	J	A

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-SW2j-S-14RE	98SY-SW2k-S-14RE			
Bis(2-ethylhexyl)phthalate	1400	910	42 (≤35)	J	A
Fluoranthene	1900	5000U	200 (≤35)	J	A
Phenanthrene	1300	5000U	200 (≤35)	J	A
Pyrene	1400	5000U	200 (≤35)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Flag	A or P	Reason
98-3365	98SY-SW2h-S-26** 98SY-SW4a-S-2** 98SY-SW4a-S-2RE** 98SY-SS1m-S-6 98SY-SS2g-S-17 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-SW2j-S-14RE 98SY-SW2k-S-14 98SY-SW2k-S-14RE 98SY-SW5a-S-2 98SY-SW5a-S-2RE	All TCL compounds	J	P	Technical holding times
98-3365	98SY-SS1m-S-6	Bis(2-chloroethyl) ether	J	A	Continuing calibration (%D)
98-3365	98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW4a-S-2RE** 98SY-SW5a-S-2	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A	Internal standards (area)
98-3365	98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2RE** 98SY-SW5a-S-2	All TCL compounds	R	A	Overall assessment of data
98-3365	98SY-SW2j-S-14 98SY-SW2k-S-14	Benzo(b)fluoranthene Bis(2-ethylhexyl)phthalate Chrysene Fluoranthene Phenanthrene Pyrene	J J J J J J	A	Field duplicates (RPD)
98-3365	98SY-SW2j-S-14RE 98SY-SW2k-S-14RE	Bis(2-ethylhexyl)phthalate Fluoranthene Phenanthrene Pyrene	J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-5	Received Date:	06/10/98
Sample ID:	**98SY-RE1D-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	06/16/98	Anal. Date:	06/19/98
Batch No:	98G2708	Prep. No:	1 of 1	Anal. Time:	21:06
Data File Name:	3365-05	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

	Surrogates		Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	71
2	2-Fluorophenol	367-12-4	21- 99	71
3	Nitrobenzene-d5	4165-60-0	35-113	81
4	Phenol-d5	4165-62-2	10- 93	77
5	Terphenyl-d14	1718-51-0	33-140	91
6	2,4,6-Tribromophenol	118-79-6	10-122	68
# of out-of-control				0

	Internal Standard		Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	98
2	Chrysene-d12	1719-03-5	50-200	102
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	104
5	Perylene-d12	1520-96-3	50-200	89
6	Phenanthrene-d10	1517-22-2	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-6	Received Date:	06/10/98
Sample ID:	98SY-SS1M-S-6	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/27/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	19:38
Data File Name:	3365-06	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U UJ
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

=	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U
64	Carbazole	86-74-8	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	60
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**65**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**60**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**62**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**72**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**55**
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	122
2	Chrysene-d12	1719-03-5	50-200	116
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	110
6	Phenanthrene-d10	1517-22-2	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-7	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	06/16/98	Anal. Date:	06/22/98
Batch No:	98G2708	Prep. No:	1 of 1	Anal. Time:	14:43
Data File Name:	3365-07A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	55
2	**2-Fluorophenol**	**367-12-4**	**21- 99**	**55**
3	**Nitrobenzene-d5**	**4165-60-0**	**35-113**	**62**
4	**Phenol-d5**	**4165-62-2**	**10- 93**	**58**
5	**Terphenyl-d14**	**1718-51-0**	**33-140**	**68**
6	**2,4,6-Tribromophenol**	**118-79-6**	**10-122**	**53**
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	118
2	Chrysene-d12	1719-03-5	50-200	142
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	119
4	Naphthalene-d8	1146-65-2	50-200	112
5	Perylene-d12	1520-96-3	50-200	122
6	Phenanthrene-d10	1517-22-2	50-200	124
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-8	Received Date:	06/10/98
Sample ID:	**98SY-SS2G-S-17**	Sample Matrix	Soil	Moisture %:	29.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/29/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	03:06
Data File Name:	3365-08	Sample Amount:	1.00 g	Dilution Factor:	150
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	110000	< 110000	U UJ
2	Acenaphthylene	208-96-8	µg/kg	110000	< 110000	U
3	Anthracene	120-12-7	µg/kg	110000	< 110000	U
4	Benz(a)anthracene	56-55-3	µg/kg	110000	< 110000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	110000	< 110000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	110000	< 110000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	110000	< 110000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	110000	< 110000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	110000	< 110000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	110000	< 110000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	110000	< 110000	U ↓
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	110000	19000	J J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	110000	< 110000	U UJ
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	110000	< 110000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	210000	< 210000	U
16	4-Chloroaniline	106-47-8	µg/kg	210000	< 210000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	110000	< 110000	U
18	2-Chlorophenol	95-57-8	µg/kg	110000	< 110000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	110000	< 110000	U
20	Chrysene	218-01-9	µg/kg	110000	< 110000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	110000	< 110000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	110000	< 110000	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	110000	< 110000	U
24	Dibenzofuran	132-64-9	µg/kg	110000	< 110000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	110000	< 110000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	110000	< 110000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	110000	< 110000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	210000	< 210000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	110000	< 110000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	110000	< 110000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	110000	< 110000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	110000	< 110000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	530000	< 530000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	530000	< 530000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	110000	< 110000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	110000	< 110000	U ↓
37	Fluoranthene	206-44-0	µg/kg	110000	18000	J J
38	Fluorene	86-73-7	µg/kg	110000	< 110000	U UJ
39	Hexachlorobenzene	118-74-1	µg/kg	110000	< 110000	U ↓
40	Hexachlorobutadiene	87-68-3	µg/kg	110000	< 110000	U ↓

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	110000	< 110000	U
42	Hexachloroethane	67-72-1	µg/kg	110000	< 110000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	110000	< 110000	U
44	Isophorone	78-59-1	µg/kg	110000	< 110000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	110000	< 110000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	110000	< 110000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	110000	< 110000	U
48	Naphthalene	91-20-3	µg/kg	110000	< 110000	U
49	2-Nitroaniline	88-74-4	µg/kg	530000	< 530000	U
50	3-Nitroaniline	99-09-2	µg/kg	530000	< 530000	U
51	4-Nitroaniline	100-01-6	µg/kg	530000	< 530000	U
52	Nitrobenzene	98-95-3	µg/kg	110000	< 110000	U
53	2-Nitrophenol	88-75-5	µg/kg	110000	< 110000	U
54	4-Nitrophenol	100-02-7	µg/kg	530000	< 530000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	110000	< 110000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	110000	< 110000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	530000	< 530000	U
58	Phenanthrene	85-01-8	µg/kg	110000	13000	J
59	Phenol	108-95-2	µg/kg	110000	< 110000	U
60	Pyrene	129-00-0	µg/kg	110000	16000	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	110000	< 110000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	110000	< 110000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	110000	< 110000	U
64	Carbazole	86-74-8	µg/kg	110000	< 110000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	28
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**16**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**16**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**52**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**20**
# of out-of-control				4

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	104
2	Chrysene-d12	1719-03-5	50-200	98
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	94
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	73
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012908

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-9	Received Date:	06/10/98
Sample ID:	**98SY-SW2H-S-26**	Sample Matrix	Soil	Moisture %:	26.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	11:37
Data File Name:	3365-09	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5400	< 5400	U
2	Acenaphthylene	208-96-8	µg/kg	5400	< 5400	U
3	Anthracene	120-12-7	µg/kg	5400	< 5400	U
4	Benz(a)anthracene	56-55-3	µg/kg	5400	< 5400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5400	< 5400	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5400	< 5400	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5400	< 5400	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5400	< 5400	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	5400	< 5400	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5400	< 5400	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5400	< 5400	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5400	5200	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5400	< 5400	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5400	< 5400	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	11000	< 11000	U
16	4-Chloroaniline	106-47-8	µg/kg	11000	< 11000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5400	< 5400	U
18	2-Chlorophenol	95-57-8	µg/kg	5400	< 5400	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5400	< 5400	U
20	Chrysene	218-01-9	µg/kg	5400	< 5400	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5400	< 5400	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5400	< 5400	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5400	< 5400	U
24	Dibenzofuran	132-64-9	µg/kg	5400	< 5400	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5400	< 5400	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5400	< 5400	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5400	< 5400	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	11000	< 11000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5400	< 5400	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5400	< 5400	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5400	< 5400	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5400	< 5400	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	27000	< 27000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	27000	< 27000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5400	< 5400	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5400	< 5400	U
37	Fluoranthene	206-44-0	µg/kg	5400	1300	J
38	Fluorene	86-73-7	µg/kg	5400	< 5400	U
39	Hexachlorobenzene	118-74-1	µg/kg	5400	< 5400	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5400	< 5400	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5400	<5400	U
42	Hexachloroethane	67-72-1	µg/kg	5400	<5400	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5400	<5400	U
44	Isophorone	78-59-1	µg/kg	5400	<5400	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5400	<5400	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5400	<5400	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5400	<5400	U
48	Naphthalene	91-20-3	µg/kg	5400	<5400	U
49	2-Nitroaniline	88-74-4	µg/kg	27000	<27000	U
50	3-Nitroaniline	99-09-2	µg/kg	27000	<27000	U
51	4-Nitroaniline	100-01-6	µg/kg	27000	<27000	U
52	Nitrobenzene	98-95-3	µg/kg	5400	<5400	U
53	2-Nitrophenol	88-75-5	µg/kg	5400	<5400	U
54	4-Nitrophenol	100-02-7	µg/kg	27000	<27000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5400	<5400	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5400	<5400	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	27000	<27000	U
58	Phenanthrene	85-01-8	µg/kg	5400	<5400	U
59	Phenol	108-95-2	µg/kg	5400	<5400	U
60	Pyrene	129-00-0	µg/kg	5400	1400	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5400	<5400	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5400	<5400	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5400	<5400	U
64	Carbazole	86-74-8	µg/kg	5400	<5400	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	45
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**33**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**19**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**77**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**30**
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	118
2	Chrysene-d12	1719-03-5	50-200	92
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	119
4	Naphthalene-d8	1146-65-2	50-200	122
5	Perylene-d12	1520-96-3	50-200	60
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012919

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-10	Received Date:	06/10/98
Sample ID:	**98SY-SW2I-S-20**	Sample Matrix	Soil	Moisture %:	21.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	12:15
Data File Name:	3365-10	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5100	< 5100	U
2	Acenaphthylene	208-96-8	µg/kg	5100	< 5100	U
3	Anthracene	120-12-7	µg/kg	5100	< 5100	U
4	Benz(a)anthracene	56-55-3	µg/kg	5100	960	J
5	Benzo(a)pyrene	50-32-8	µg/kg	5100	< 5100	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5100	980	J
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5100	< 5100	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5100	630	J
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5100	< 5100	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5100	< 5100	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5100	< 5100	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5100	5530	
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5100	< 5100	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5100	< 5100	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	10000	< 10000	U
16	4-Chloroaniline	106-47-8	µg/kg	10000	< 10000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5100	< 5100	U
18	2-Chlorophenol	95-57-8	µg/kg	5100	< 5100	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5100	< 5100	U
20	Chrysene	218-01-9	µg/kg	5100	1000	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5100	< 5100	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5100	< 5100	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5100	< 5100	U
24	Dibenzofuran	132-64-9	µg/kg	5100	< 5100	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5100	< 5100	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5100	< 5100	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5100	< 5100	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	10000	< 10000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5100	< 5100	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5100	< 5100	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5100	< 5100	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5100	< 5100	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	26000	< 26000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	26000	< 26000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5100	< 5100	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5100	< 5100	U
37	Fluoranthene	206-44-0	µg/kg	5100	2000	J
38	Fluorene	86-73-7	µg/kg	5100	< 5100	U
39	Hexachlorobenzene	118-74-1	µg/kg	5100	< 5100	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5100	< 5100	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5100	< 5100	U UJ
42	Hexachloroethane	67-72-1	µg/kg	5100	< 5100	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5100	< 5100	U
44	Isophorone	78-59-1	µg/kg	5100	< 5100	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5100	< 5100	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5100	< 5100	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5100	< 5100	U
48	Naphthalene	91-20-3	µg/kg	5100	< 5100	U
49	2-Nitroaniline	88-74-4	µg/kg	26000	< 26000	U
50	3-Nitroaniline	99-09-2	µg/kg	26000	< 26000	U
51	4-Nitroaniline	100-01-6	µg/kg	26000	< 26000	U
52	Nitrobenzene	98-95-3	µg/kg	5100	< 5100	U
53	2-Nitrophenol	88-75-5	µg/kg	5100	< 5100	U
54	4-Nitrophenol	100-02-7	µg/kg	26000	< 26000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5100	< 5100	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5100	< 5100	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	26000	< 26000	U
58	Phenanthrene	85-01-8	µg/kg	5100	970	J J
59	Phenol	108-95-2	µg/kg	5100	< 5100	U UJ
60	Pyrene	129-00-0	µg/kg	5100	2100	J J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5100	< 5100	U UJ
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5100	< 5100	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5100	< 5100	U
64	Carbazole	86-74-8	µg/kg	5100	< 5100	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	37
2	**2-Fluorophenol**	367-12-4	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**11**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**14**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**101**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**53**
# of out-of-control				3

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	115
2	Chrysene-d12	1719-03-5	50-200	91
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	114
4	Naphthalene-d8	1146-65-2	50-200	119
5	Perylene-d12	1520-96-3	50-200	59
6	Phenanthrene-d10	1517-22-2	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12932

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	12:53
Data File Name:	3365-11	Sample Amount:	30 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5100	< 5100	U
2	Acenaphthylene	208-96-8	µg/kg	5100	< 5100	U
3	Anthracene	120-12-7	µg/kg	5100	< 5100	U
4	Benz(a)anthracene	56-55-3	µg/kg	5100	< 5100	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5100	< 5100	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5100	890	J
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5100	< 5100	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5100	< 5100	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5100	< 5100	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5100	< 5100	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5100	< 5100	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5100	1500	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5100	< 5100	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5100	< 5100	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	10000	< 10000	U
16	4-Chloroaniline	106-47-8	µg/kg	10000	< 10000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5100	< 5100	U
18	2-Chlorophenol	95-57-8	µg/kg	5100	< 5100	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5100	< 5100	U
20	Chrysene	218-01-9	µg/kg	5100	900	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5100	< 5100	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5100	< 5100	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5100	< 5100	U
24	Dibenzofuran	132-64-9	µg/kg	5100	< 5100	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5100	< 5100	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5100	< 5100	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5100	< 5100	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	10000	< 10000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5100	< 5100	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5100	< 5100	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5100	< 5100	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5100	< 5100	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	26000	< 26000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	26000	< 26000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5100	< 5100	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5100	< 5100	U
37	Fluoranthene	206-44-0	µg/kg	5100	1800	J
38	Fluorene	86-73-7	µg/kg	5100	< 5100	U
39	Hexachlorobenzene	118-74-1	µg/kg	5100	< 5100	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5100	< 5100	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
11	Hexachlorocyclopentadiene	77-47-4	µg/kg	5100	<5100	U
12	Hexachloroethane	67-72-1	µg/kg	5100	<5100	U
13	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5100	<5100	U
14	Isophorone	78-59-1	µg/kg	5100	<5100	U
15	2-Methylnaphthalene	91-57-6	µg/kg	5100	<5100	U
16	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5100	<5100	U
17	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5100	<5100	U
18	Naphthalene	91-20-3	µg/kg	5100	<5100	U
19	2-Nitroaniline	88-74-4	µg/kg	26000	<26000	U
20	3-Nitroaniline	99-09-2	µg/kg	26000	<26000	U
21	4-Nitroaniline	100-01-6	µg/kg	26000	<26000	U
22	Nitrobenzene	98-95-3	µg/kg	5100	<5100	U
23	2-Nitrophenol	88-75-5	µg/kg	5100	<5100	U
24	4-Nitrophenol	100-02-7	µg/kg	26000	<26000	U
25	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5100	<5100	U
26	N-Nitrosodiphenylamine	86-30-6	µg/kg	5100	<5100	U
27	Pentachlorophenol (PCP)	87-86-5	µg/kg	26000	<26000	U
28	Phenanthrene	85-01-8	µg/kg	5100	1300	J
29	Phenol	108-95-2	µg/kg	5100	<5100	U
30	Pyrene	129-00-0	µg/kg	5100	1500	J
31	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5100	<5100	U
32	2,4,5-Trichlorophenol	95-95-4	µg/kg	5100	<5100	U
33	2,4,6-Trichlorophenol	88-06-2	µg/kg	5100	<5100	U
64	Carbazole	86-74-8	µg/kg	5100	<5100	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	56
2	2-Fluorophenol	367-12-4	25-120	17
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	25-112	43
5	Terphenyl-d14	1718-51-0	19-136	96
6	2,4,6-Tribromophenol	118-79-6	19-121	57
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	82
2	Chrysene-d12	1719-03-5	50-200	68
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
4	Naphthalene-d8	1146-65-2	50-200	84
5	Perylene-d12	1520-96-3	50-200	44
6	Phenanthrene-d10	1517-22-2	50-200	76
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012944

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11RE	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14RE**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/29/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	00:35
Data File Name:	3365-11A	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5100	< 5100	U UJ
2	Acenaphthylene	208-96-8	µg/kg	5100	< 5100	U
3	Anthracene	120-12-7	µg/kg	5100	< 5100	U
4	Benz(a)anthracene	56-55-3	µg/kg	5100	< 5100	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5100	< 5100	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5100	< 5100	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5100	< 5100	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5100	< 5100	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5100	< 5100	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5100	< 5100	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5100	< 5100	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5100	1400	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5100	< 5100	U UJ
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5100	< 5100	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	10000	< 10000	U
16	4-Chloroaniline	106-47-8	µg/kg	10000	< 10000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5100	< 5100	U
18	2-Chlorophenol	95-57-8	µg/kg	5100	< 5100	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5100	< 5100	U
20	Chrysene	218-01-9	µg/kg	5100	< 5100	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5100	< 5100	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5100	< 5100	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5100	< 5100	U
24	Dibenzofuran	132-64-9	µg/kg	5100	< 5100	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5100	< 5100	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5100	< 5100	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5100	< 5100	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	10000	< 10000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5100	< 5100	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5100	< 5100	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5100	< 5100	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5100	< 5100	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	26000	< 26000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	26000	< 26000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5100	< 5100	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5100	< 5100	U
37	Fluoranthene	206-44-0	µg/kg	5100	1900	J
38	Fluorene	86-73-7	µg/kg	5100	< 5100	U UJ
39	Hexachlorobenzene	118-74-1	µg/kg	5100	< 5100	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5100	< 5100	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5100	<5100	U
42	Hexachloroethane	67-72-1	µg/kg	5100	<5100	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5100	<5100	U
44	Isophorone	78-59-1	µg/kg	5100	<5100	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5100	<5100	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5100	<5100	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5100	<5100	U
48	Naphthalene	91-20-3	µg/kg	5100	<5100	U
49	2-Nitroaniline	88-74-4	µg/kg	26000	<26000	U
50	3-Nitroaniline	99-09-2	µg/kg	26000	<26000	U
51	4-Nitroaniline	100-01-6	µg/kg	26000	<26000	U
52	Nitrobenzene	98-95-3	µg/kg	5100	<5100	U
53	2-Nitrophenol	88-75-5	µg/kg	5100	<5100	U
54	4-Nitrophenol	100-02-7	µg/kg	26000	<26000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5100	<5100	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5100	<5100	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	26000	<26000	U
58	Phenanthrene	85-01-8	µg/kg	5100	1300	J
59	Phenol	108-95-2	µg/kg	5100	<5100	U
60	Pyrene	129-00-0	µg/kg	5100	1400	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5100	<5100	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5100	<5100	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5100	<5100	U
64	Carbazole	86-74-8	µg/kg	5100	<5100	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-120	12
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	25-112	49
5	Terphenyl-d14	1718-51-0	19-136	90
6	2,4,6-Tribromophenol	118-79-6	19-121	59
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	84
2	Chrysene-d12	1719-03-5	50-200	76
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	65
6	Phenanthrene-d10	1517-22-2	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012955

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	13:55
Data File Name:	3365-12	Sample Amount:	30 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5000	< 5000	U
2	Acenaphthylene	208-96-8	µg/kg	5000	< 5000	U
3	Anthracene	120-12-7	µg/kg	5000	< 5000	U
4	Benz(a)anthracene	56-55-3	µg/kg	5000	< 5000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5000	< 5000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5000	< 5000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5000	< 5000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5000	< 5000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5000	< 5000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5000	< 5000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5000	< 5000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5000	< 5000	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5000	< 5000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5000	< 5000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	10000	< 10000	U
16	4-Chloroaniline	106-47-8	µg/kg	10000	< 10000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5000	< 5000	U
18	2-Chlorophenol	95-57-8	µg/kg	5000	< 5000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5000	< 5000	U
20	Chrysene	218-01-9	µg/kg	5000	< 5000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5000	< 5000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5000	< 5000	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5000	< 5000	U
24	Dibenzofuran	132-64-9	µg/kg	5000	< 5000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5000	< 5000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5000	< 5000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5000	< 5000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	10000	< 10000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5000	< 5000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5000	< 5000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5000	< 5000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5000	< 5000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	25000	< 25000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	25000	< 25000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5000	< 5000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5000	< 5000	U
37	Fluoranthene	206-44-0	µg/kg	5000	< 5000	U
38	Fluorene	86-73-7	µg/kg	5000	< 5000	U
39	Hexachlorobenzene	118-74-1	µg/kg	5000	< 5000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5000	< 5000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5000	< 5000	U
42	Hexachloroethane	67-72-1	µg/kg	5000	< 5000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5000	< 5000	U
44	Isophorone	78-59-1	µg/kg	5000	< 5000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5000	< 5000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5000	< 5000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5000	< 5000	U
48	Naphthalene	91-20-3	µg/kg	5000	< 5000	U
49	2-Nitroaniline	88-74-4	µg/kg	25000	< 25000	U
50	3-Nitroaniline	99-09-2	µg/kg	25000	< 25000	U
51	4-Nitroaniline	100-01-6	µg/kg	25000	< 25000	U
52	Nitrobenzene	98-95-3	µg/kg	5000	< 5000	U
53	2-Nitrophenol	88-75-5	µg/kg	5000	< 5000	U
54	4-Nitrophenol	100-02-7	µg/kg	25000	< 25000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5000	< 5000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5000	< 5000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	25000	< 25000	U
58	Phenanthrene	85-01-8	µg/kg	5000	< 5000	U
59	Phenol	108-95-2	µg/kg	5000	< 5000	U
60	Pyrene	129-00-0	µg/kg	5000	< 5000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5000	< 5000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5000	< 5000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5000	< 5000	U
64	Carbazole	86-74-8	µg/kg	5000	< 5000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	51
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**6**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**38**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**37**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**83**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**48**
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	75
2	Chrysene-d12	1719-03-5	50-200	65
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
4	Naphthalene-d8	1146-65-2	50-200	78
5	Perylene-d12	1520-96-3	50-200	40
6	Phenanthrene-d10	1517-22-2	50-200	70
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12RE	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14RE**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/29/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	01:13
Data File Name:	3365-12.X	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5000	< 5000	U UJ
2	Acenaphthylene	208-96-8	µg/kg	5000	< 5000	U
3	Anthracene	120-12-7	µg/kg	5000	< 5000	U
4	Benz(a)anthracene	56-55-3	µg/kg	5000	< 5000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5000	< 5000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5000	< 5000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5000	< 5000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5000	< 5000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5000	< 5000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5000	< 5000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5000	< 5000	U Y
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5000	910	J J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5000	< 5000	U UJ
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5000	< 5000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	10000	< 10000	U
16	4-Chloroaniline	106-47-8	µg/kg	10000	< 10000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	5000	< 5000	U
18	2-Chlorophenol	95-57-8	µg/kg	5000	< 5000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	5000	< 5000	U
20	Chrysene	218-01-9	µg/kg	5000	< 5000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5000	< 5000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5000	< 5000	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5000	< 5000	U
24	Dibenzofuran	132-64-9	µg/kg	5000	< 5000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5000	< 5000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5000	< 5000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5000	< 5000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	10000	< 10000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5000	< 5000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5000	< 5000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5000	< 5000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5000	< 5000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	25000	< 25000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	25000	< 25000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5000	< 5000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5000	< 5000	U
37	Fluoranthene	206-44-0	µg/kg	5000	< 5000	U
38	Fluorene	86-73-7	µg/kg	5000	< 5000	U
39	Hexachlorobenzene	118-74-1	µg/kg	5000	< 5000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5000	< 5000	U UJ

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5000	< 5000	~~U~~ UJ
42	Hexachloroethane	67-72-1	µg/kg	5000	< 5000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5000	< 5000	U
44	Isophorone	78-59-1	µg/kg	5000	< 5000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5000	< 5000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5000	< 5000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5000	< 5000	U
48	Naphthalene	91-20-3	µg/kg	5000	< 5000	U
49	2-Nitroaniline	88-74-4	µg/kg	25000	< 25000	U
50	3-Nitroaniline	99-09-2	µg/kg	25000	< 25000	U
51	4-Nitroaniline	100-01-6	µg/kg	25000	< 25000	U
52	Nitrobenzene	98-95-3	µg/kg	5000	< 5000	U
53	2-Nitrophenol	88-75-5	µg/kg	5000	< 5000	U
54	4-Nitrophenol	100-02-7	µg/kg	25000	< 25000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5000	< 5000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5000	< 5000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	25000	< 25000	U
58	Phenanthrene	85-01-8	µg/kg	5000	< 5000	U
59	Phenol	108-95-2	µg/kg	5000	< 5000	U
60	Pyrene	129-00-0	µg/kg	5000	< 5000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5000	< 5000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5000	< 5000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5000	< 5000	U
64	Carbazole	86-74-8	µg/kg	5000	< 5000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	53
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**14**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**37**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**42**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**79**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**47**
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	81
2	Chrysene-d12	1719-03-5	50-200	73
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	60
6	Phenanthrene-d10	1517-22-2	50-200	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C12970

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13	Received Date:	06/10/98
Sample ID:	**98SY-SW4A-S-2**	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	14:34
Data File Name:	3365-13	Sample Amount:	30 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	6900	< 6900	U UJ
2	Acenaphthylene	208-96-8	µg/kg	6900	< 6900	U
3	Anthracene	120-12-7	µg/kg	6900	< 6900	U
4	Benz(a)anthracene	56-55-3	µg/kg	6900	1000	J J
5	Benzo(a)pyrene	50-32-8	µg/kg	6900	< 6900	U UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	6900	< 6900	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	6900	< 6900	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	6900	< 6900	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	6900	< 6900	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	6900	< 6900	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	6900	< 6900	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	6900	2500	J J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	6900	< 6900	U UJ
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	6900	< 6900	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	14000	< 14000	U
16	**4-Chloroaniline**	**106-47-8**	**µg/kg**	**14000**	**< 14000**	U
17	**2-Chloronaphthalene**	**91-58-7**	**µg/kg**	**6900**	**< 6900**	U
18	**2-Chlorophenol**	**95-57-8**	**µg/kg**	**6900**	**< 6900**	U
19	**4-Chlorophenyl phenyl ether**	**7005-72-3**	**µg/kg**	**6900**	**< 6900**	U
20	**Chrysene**	**218-01-9**	**µg/kg**	**6900**	**1400**	J J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	6900	< 6900	U UJ
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	6900	< 6900	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	6900	< 6900	U
24	Dibenzofuran	132-64-9	µg/kg	6900	< 6900	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	6900	< 6900	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	6900	< 6900	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	6900	< 6900	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	14000	< 14000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	6900	< 6900	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	6900	< 6900	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	6900	< 6900	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	6900	< 6900	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	34000	< 34000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	34000	< 34000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	6900	< 6900	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	6900	< 6900	U
37	Fluoranthene	206-44-0	µg/kg	6900	4100	J J
38	Fluorene	86-73-7	µg/kg	6900	< 6900	U UJ
39	Hexachlorobenzene	118-74-1	µg/kg	6900	< 6900	U
40	Hexachlorobutadiene	87-68-3	µg/kg	6900	< 6900	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	6900	<6900	U
42	Hexachloroethane	67-72-1	µg/kg	6900	<6900	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	6900	<6900	U
44	Isophorone	78-59-1	µg/kg	6900	<6900	U
45	2-Methylnaphthalene	91-57-6	µg/kg	6900	1400	J
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	6900	<6900	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	6900	<6900	U
48	Naphthalene	91-20-3	µg/kg	6900	<6900	U
49	2-Nitroaniline	88-74-4	µg/kg	34000	<34000	U
50	3-Nitroaniline	99-09-2	µg/kg	34000	<34000	U
51	4-Nitroaniline	100-01-6	µg/kg	34000	<34000	U
52	Nitrobenzene	98-95-3	µg/kg	6900	<6900	U
53	2-Nitrophenol	88-75-5	µg/kg	6900	<6900	U
54	4-Nitrophenol	100-02-7	µg/kg	34000	<34000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	6900	<6900	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	6900	<6900	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	34000	<34000	U
58	Phenanthrene	85-01-8	µg/kg	6900	660	J
59	Phenol	108-95-2	µg/kg	6900	<6900	U
60	Pyrene	129-00-0	µg/kg	6900	2900	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6900	<6900	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	6900	<6900	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	6900	<6900	U
64	Carbazole	86-74-8	µg/kg	6900	<6900	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	19
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**10**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**0**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**38**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**12**
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	77
2	Chrysene-d12	1719-03-5	50-200	64
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	71
4	Naphthalene-d8	1146-65-2	50-200	79
5	Perylene-d12	1520-96-3	50-200	35
6	Phenanthrene-d10	1517-22-2	50-200	72
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C12978

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13RE	Received Date:	06/10/98
Sample ID:	**98SY-SW4A-S-2RE**	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/29/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	01:51
Data File Name:	3365-13A	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	6900	< 6900	U
2	Acenaphthylene	208-96-8	µg/kg	6900	< 6900	U
3	Anthracene	120-12-7	µg/kg	6900	< 6900	U
4	Benz(a)anthracene	56-55-3	µg/kg	6900	1200	J
5	Benzo(a)pyrene	50-32-8	µg/kg	6900	< 6900	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	6900	1200	J
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	6900	< 6900	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	6900	< 6900	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	6900	< 6900	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	6900	< 6900	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	6900	< 6900	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	6900	2400	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	6900	< 6900	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	6900	< 6900	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	14000	< 14000	U
16	4-Chloroaniline	106-47-8	µg/kg	14000	< 14000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	6900	< 6900	U
18	2-Chlorophenol	95-57-8	µg/kg	6900	< 6900	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	6900	< 6900	U
20	Chrysene	218-01-9	µg/kg	6900	1300	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	6900	< 6900	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	6900	< 6900	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	6900	< 6900	U
24	Dibenzofuran	132-64-9	µg/kg	6900	< 6900	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	6900	< 6900	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	6900	< 6900	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	6900	< 6900	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	14000	< 14000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	6900	< 6900	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	6900	< 6900	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	6900	< 6900	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	6900	< 6900	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	34000	< 34000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	34000	< 34000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	6900	< 6900	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	6900	< 6900	U
37	Fluoranthene	206-44-0	µg/kg	6900	1300	J
38	Fluorene	86-73-7	µg/kg	6900	< 6900	U
39	Hexachlorobenzene	118-74-1	µg/kg	6900	< 6900	U
40	Hexachlorobutadiene	87-68-3	µg/kg	6900	< 6900	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	6900	<6900	U
42	Hexachloroethane	67-72-1	µg/kg	6900	<6900	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	6900	<6900	U
44	Isophorone	78-59-1	µg/kg	6900	<6900	U
45	2-Methylnaphthalene	91-57-6	µg/kg	6900	1500	J
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	6900	<6900	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	6900	<6900	U
48	Naphthalene	91-20-3	µg/kg	6900	<6900	U
49	2-Nitroaniline	88-74-4	µg/kg	34000	<34000	U
50	3-Nitroaniline	99-09-2	µg/kg	34000	<34000	U
51	4-Nitroaniline	100-01-6	µg/kg	34000	<34000	U
52	Nitrobenzene	98-95-3	µg/kg	6900	<6900	U
53	2-Nitrophenol	88-75-5	µg/kg	6900	<6900	U
54	4-Nitrophenol	100-02-7	µg/kg	34000	<34000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	6900	<6900	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	6900	<6900	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	34000	<34000	U
58	Phenanthrene	85-01-8	µg/kg	6900	640	J
59	Phenol	108-95-2	µg/kg	6900	<6900	U
60	Pyrene	129-00-0	µg/kg	6900	2700	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6900	<6900	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	6900	<6900	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	6900	<6900	U
64	Carbazole	86-74-8	µg/kg	6900	<6900	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	19
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**10**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**6**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**35**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**13**
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	71
2	Chrysene-d12	1719-03-5	50-200	64
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
4	Naphthalene-d8	1146-65-2	50-200	71
5	Perylene-d12	1520-96-3	50-200	48
6	Phenanthrene-d10	1517-22-2	50-200	67
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

012989

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14	Received Date:	06/10/98
Sample ID:	**98SY-SW5A-S-2**	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/29/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	02:28
Data File Name:	3365-14A	Sample Amount:	30 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	5400	1200	J
2	Acenaphthylene	208-96-8	µg/kg	5400	480	J
3	Anthracene	120-12-7	µg/kg	5400	< 5400	U
4	Benz(a)anthracene	56-55-3	µg/kg	5400	< 5400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	5400	< 5400	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	5400	< 5400	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	5400	< 5400	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	5400	< 5400	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	5400	< 5400	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	5400	< 5400	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	5400	< 5400	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	5400	2900	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	5400	< 5400	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	5400	< 5400	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	11000	11000	J
16	**4-Chloroaniline**	**106-47-8**	**µg/kg**	**11000**	**< 11000**	**U**
17	**2-Chloronaphthalene**	**91-58-7**	**µg/kg**	**5400**	**< 5400**	**U**
18	**2-Chlorophenol**	**95-57-8**	**µg/kg**	**5400**	**< 5400**	**U**
19	**4-Chlorophenyl phenyl ether**	**7005-72-3**	**µg/kg**	**5400**	**< 5400**	**U**
20	**Chrysene**	**218-01-9**	**µg/kg**	**5400**	**< 5400**	**U**
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	5400	< 5400	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	5400	< 5400	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	5400	< 5400	U
24	Dibenzofuran	132-64-9	µg/kg	5400	< 5400	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	5400	< 5400	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	5400	< 5400	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	5400	< 5400	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	11000	< 11000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	5400	< 5400	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	5400	< 5400	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	5400	< 5400	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	5400	< 5400	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	27000	< 27000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	27000	< 27000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	5400	< 5400	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	5400	< 5400	U
37	Fluoranthene	206-44-0	µg/kg	5400	< 5400	U
38	Fluorene	86-73-7	µg/kg	5400	1900	J
39	Hexachlorobenzene	118-74-1	µg/kg	5400	< 5400	U
40	Hexachlorobutadiene	87-68-3	µg/kg	5400	< 5400	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	5400	< 5400	U
42	Hexachloroethane	67-72-1	µg/kg	5400	< 5400	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	5400	< 5400	U
44	Isophorone	78-59-1	µg/kg	5400	< 5400	U
45	2-Methylnaphthalene	91-57-6	µg/kg	5400	110000	
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	5400	< 5400	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	5400	< 5400	U
48	Naphthalene	91-20-3	µg/kg	5400	4300	J
49	2-Nitroaniline	88-74-4	µg/kg	27000	< 27000	U
50	3-Nitroaniline	99-09-2	µg/kg	27000	< 27000	U
51	4-Nitroaniline	100-01-6	µg/kg	27000	< 27000	U
52	Nitrobenzene	98-95-3	µg/kg	5400	< 5400	U
53	2-Nitrophenol	88-75-5	µg/kg	5400	< 5400	U
54	4-Nitrophenol	100-02-7	µg/kg	27000	< 27000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	5400	< 5400	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	5400	< 5400	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	27000	< 27000	U
58	Phenanthrene	85-01-8	µg/kg	5400	< 5400	U
59	Phenol	108-95-2	µg/kg	5400	< 5400	U
60	Pyrene	129-00-0	µg/kg	5400	< 5400	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5400	< 5400	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	5400	< 5400	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	5400	< 5400	U
64	Carbazole	86-74-8	µg/kg	5400	< 5400	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	40
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**32**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**23**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**70**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**34**
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	72
2	Chrysene-d12	1719-03-5	50-200	66
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	67
4	Naphthalene-d8	1146-65-2	50-200	73
5	Perylene-d12	1520-96-3	50-200	47
6	Phenanthrene-d10	1517-22-2	50-200	68
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013000

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14RE	Received Date:	06/10/98
Sample ID:	**98SY-SW5A-S-2RE**	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	12:19
Data File Name:	3365-14B	Sample Amount:	30.0 g	Dilution Factor:	40
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	27000	< 27000	U
2	Acenaphthylene	208-96-8	µg/kg	27000	< 27000	U
3	Anthracene	120-12-7	µg/kg	27000	< 27000	U
4	Benz(a)anthracene	56-55-3	µg/kg	27000	< 27000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	27000	< 27000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	27000	< 27000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	27000	< 27000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	27000	< 27000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	27000	< 27000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	27000	< 27000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	27000	< 27000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	27000	< 27000	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	27000	< 27000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	27000	< 27000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	54000	< 54000	U
16	4-Chloroaniline	106-47-8	µg/kg	54000	< 54000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	27000	< 27000	U
18	2-Chlorophenol	95-57-8	µg/kg	27000	< 27000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	27000	< 27000	U
20	Chrysene	218-01-9	µg/kg	27000	< 27000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	27000	< 27000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	27000	< 27000	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	27000	< 27000	U
24	Dibenzofuran	132-64-9	µg/kg	27000	< 27000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	27000	< 27000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	27000	< 27000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	27000	< 27000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	54000	< 54000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	27000	< 27000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	27000	< 27000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	27000	< 27000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	27000	< 27000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	130000	< 130000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	130000	< 130000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	27000	< 27000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	27000	< 27000	U
37	Fluoranthene	206-44-0	µg/kg	27000	< 27000	U
38	Fluorene	86-73-7	µg/kg	27000	< 27000	U
39	Hexachlorobenzene	118-74-1	µg/kg	27000	< 27000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	27000	< 27000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	27000	< 27000	U
42	Hexachloroethane	67-72-1	µg/kg	27000	< 27000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	27000	< 27000	U
44	Isophorone	78-59-1	µg/kg	27000	< 27000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	27000	100000	
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	27000	< 27000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	27000	< 27000	U
48	Naphthalene	91-20-3	µg/kg	27000	3300	J
49	2-Nitroaniline	88-74-4	µg/kg	130000	< 130000	U
50	3-Nitroaniline	99-09-2	µg/kg	130000	< 130000	U
51	4-Nitroaniline	100-01-6	µg/kg	130000	< 130000	U
52	Nitrobenzene	98-95-3	µg/kg	27000	< 27000	U
53	2-Nitrophenol	88-75-5	µg/kg	27000	< 27000	U
54	4-Nitrophenol	100-02-7	µg/kg	130000	< 130000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	27000	< 27000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	27000	< 27000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	130000	< 130000	U
58	Phenanthrene	85-01-8	µg/kg	27000	< 27000	U
59	Phenol	108-95-2	µg/kg	27000	< 27000	U
60	Pyrene	129-00-0	µg/kg	27000	< 27000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	27000	< 27000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	27000	< 27000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	27000	< 27000	U
64	Carbazole	86-74-8	µg/kg	27000	< 27000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	29
2	**2-Fluorophenol**	**367-12-4**	**25-120**	**0**
3	**Nitrobenzene-d5**	**4165-60-0**	**23-119**	**0**
4	**Phenol-d5**	**4165-62-2**	**25-112**	**0**
5	**Terphenyl-d14**	**1718-51-0**	**19-136**	**46**
6	**2,4,6-Tribromophenol**	**118-79-6**	**19-121**	**0**
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	112
2	Chrysene-d12	1719-03-5	50-200	107
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
4	Naphthalene-d8	1146-65-2	50-200	115
5	Perylene-d12	1520-96-3	50-200	94
6	Phenanthrene-d10	1517-22-2	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013017

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 10, 1998

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-RE1d-W-14
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SS2g-S-17
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2k-S-14
98SY-SW4a-S-2**
98SY-SW5a-S-2
98SY-SS1m-S-6MS
98SY-SS1m-S-6MSD

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 10 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample 98SY-RE1d-W-14 was identified as an equipment rinsate. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-SS1m-S-6MS/MSD (All soil samples in SDG 98-3265)	Aroclor-1016 Aroclor-1260	131 (30-129) NC (30-129)	180 (30-129) 10 (30-129)	- 200 (≤37)	J J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 98SY-SW2j-S-14 and 98SY-SW2k-S-14 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-SW2j-S-14	98SY-SW2k-S-14			
Aroclor-1260	1800	1270	35 (≤35)	-	-

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Flag	A or P	Reason
98-3365	98SY-SS1m-S-6 98SY-SS2g-S-17 98SY-SW2h-S-26** 98SY-SW2i-S-20 98SY-SW2j-S-14 98SY-SW2k-S-14 98SY-SW4a-S-2** 98SY-SW5a-S-2	Aroclor-1016 Aroclor-1260	J J	A	Matrix spike/Matrix spike duplicates (%R)(RPD)

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

3941 C3

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-5	Received Date:	06/10/98
Sample ID:	**98SY-RE1D-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/24/98
Batch No:	98G2694	Prep. No:	1 of 1	Anal. Time:	17:45
Data File Name:	3365-105	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	< 2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	< 5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	< 2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	< 2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	< 2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	< 1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	< 1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	107
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-6	Received Date:	06/10/98
Sample ID:	98SY-SS1M-S-6	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	20:28
Data File Name:	3365.106	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	53	< 53	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	< 110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	53	< 53	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	53	< 53	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	53	< 53	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	< 27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	100 [a]	J

Surrogates			Control Limit. %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	98
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	121
# of out-of-control				0

[a] Sample also contained chlordane.

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6/29/98

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-7	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/24/98
Batch No:	98G2694	Prep. No:	1 of 1	Anal. Time:	18:11
Data File Name:	3365-107	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	< 2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	< 5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	< 2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	< 2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	< 2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	< 1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	< 1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	106
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013273

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-8	Received Date:	06/10/98
Sample ID:	98SY-SS2G-S-17	Sample Matrix	Soil	Moisture %:	29.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/25/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	17:35
Data File Name:	3365.008	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	70	<70	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	140	<140	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	70	<70	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	70	<70	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	70	<70	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	35	<35	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	35	708	J

Surrogates			Control Limit. %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	119
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	114
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013276

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-9	Received Date:	06/10/98
Sample ID:	**98SY-SW2H-S-26**	Sample Matrix	Soil	Moisture %:	26.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/25/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	18:00
Data File Name:	3365.009	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	68	<68	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	140	<140	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	68	<68	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	68	<68	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	68	<68	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	34	<34	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	34	792	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	115
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-10	Received Date:	06/10/98
Sample ID:	**98SY-SW2I-S-20**	Sample Matrix	Soil	Moisture %:	21.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	17:44
Data File Name:	3365.110	Sample Amount:	30.0 g	Dilution Factor:	5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	320	<320	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	640	<640	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	320	<320	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	320	<320	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	320	<320	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	160	<160	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	160	3980	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	22
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	22
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013284

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	18:09
Data File Name:	3365.111	Sample Amount:	30.0 g	Dilution Factor:	2
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	130	< 130	UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	260	< 260	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	130	< 130	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	130	< 130	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	130	< 130	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	64	< 64	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	64	1800	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	101
2	2,4,5,6-Tetrachloro-m-xyiene	877-09-8	30-149	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	19:37
Data File Name:	3365.112	Sample Amount:	30.0 g	Dilution Factor:	2
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	130	< 130	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	250	< 250	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	130	< 130	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	130	< 130	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	130	< 130	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	63	< 63	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	63	1270	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	103
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13	Received Date:	06/10/98
Sample ID:	**98SY-SW4A-S-2**	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	20:02
Data File Name:	3365.113	Sample Amount:	30.0 g	Dilution Factor:	5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	430	< 430	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	860	< 860	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	430	< 430	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	430	< 430	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	430	< 430	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	220	< 220	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	220	2400	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	103
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013296

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14	Received Date:	06/10/98
Sample ID:	**98SY-SW5A-S-2**	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/19/98	Anal. Date:	06/25/98
Batch No:	98G2753	Prep. No:	1 of 1	Anal. Time:	20:06
Data File Name:	3365.014	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	67	<67	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	130	<130	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	67	<67	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	67	<67	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	67	<67	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	34	<34	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	34	270	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	110
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013300

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 13, 1998

Matrix: Soil/Water

Parameters: Wet Chemistry

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-PL1a-S-1.0
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SS2g-S-17
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2k-S-14
98SY-SW4a-S-2**
98SY-SW5a-S-2
98SY-TO4a-S-6
98SY-TO4a-W-12.1
98SY-TO4b-S-1
98SY-TO4b-W-2
98SY-TO4c-S-1
98SY-TO4c-W-3.5
98SY-TO4d-S-1
98SY-TO4e-S-1
98SY-TO4e-W-3.5
98SY-TO6a-S-2.5
98SY-TO6a-W-7
98SY-TO6b-W-8.2
98SY-TO6b-S-2.5
98SY-TO4a-S-6MS
98SY-TO4a-S-6MSD
98SY-TO4a-S-6DUP
98SY-TO4a-W-12.1MS
98SY-TO4a-W-12.1MSD
98SY-TO4a-W-12.1DUP
98SY-TO4b-W-2MS
98SY-TO4b-W-2MSD
98SY-TO4b-W-2DUP
98SY-TO4c-W-3.5DUP
98SY-SS1m-W-10DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 19 soil samples and 15 water samples listed on the cover sheet. The analyses were per EPA Method 335.2 for Cyanide, EPA SW 846 Method 7196 for Hexavalent Chromium, EPA SW 846 Method 9040 for pH, Standard Methods 9221B for Total Coliform, and Standard Methods 9221E for Fecal Coliform.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
98SY-SS2g-S-17	pH	No DUP analysis associated with this sample.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Wet Chemistry - Data Qualification Summary - SDG 98-3365

SDG	Sample	Analyte	Flag	A or P	Reason
98-3365	98SY-SS2g-S-17	pH	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Wet Chemistry - Field Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

294166

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method: 9040
Project ID: Long Beach Naval Shipyard, LOCS Service ID: 983365 Collected by:

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rec Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3365-1	98SY-PL1A-S-1.5	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.22	
98-3365-6	98SY-SS1M-S-6	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.09	
98-3365-8	98SY-SS2G-S-17	Soil	06/10/98	06/10/98	06/16/98	98W3534	pH unit	0.01	7.40	
98-3365-9	98SY-SW2H-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.38	
98-3365-10	98SY-SW2I-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.42	
98-3365-11	98SY-SW2J-S-11	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.67	
98-3365-12	98SY-SW2K-S-13	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.70	
98-3365-14	98SY-SW1A-S-2	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.48	
98-3365-15	98SY-SW5A-S-2	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	7.55	
98-3365-16	98SY-T01A-S-6	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.00	
98-3365-17	98SY-T01A-W-2.5	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.44	
98-3365-17	98SY-T01B-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.03	
98-3365-18	98SY-T04B-W-2	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.07	
98-3365-19	98SY-T04C-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	8.82	
98-3365-20	98SY-T04C-W-3.5	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.55	
98-3365-21	98SY-T04D-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.07	
98-3365-22	98SY-T04E-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	8.91	
98-3365-23	98SY-T04E-W-3.5	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.52	
98-3365-24	98SY-T06A-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	8.93	
98-3365-25	98SY-T06A-W-7	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.47	
98-3365-26	98SY-T06B-W-8.2	Water	06/10/98	06/10/98	06/11/98	98W3409	pH unit	0.01	7.20	
98-3365-27	98SY-TO6B-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3533	pH unit	0.01	9.15	
98W3533-MB-01		Soil	06/16/98	06/16/98	06/16/98	98W3533	pH unit	0.01	6.57	
98W3534-MB-01		Soil	06/16/98	06/16/98	06/16/98	98W3534	pH unit	0.01	6.55	
98W3409-MB-01		Water	06/11/98	06/11/98	06/11/98	98W3409	pH unit	0.01	6.57	

Qualifier:
Qualifier: U = Not Detected or less than MDL
J = Less than RL, PQL, EQL or CRDL, but greater than MDL.

014172

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name: CDM Federal Programs Corp. Project No: 3210-011 Anal. Method 335.2
Project ID: Long Beach Naval Shipyard (LBNS) Service ID: 983365 Collected by:

Component Name: Cyanide, Total
CAS No: 57-12-5

Job ID	Sample ID	Matrix	Coll. Date	Rec Date	Anal. Date	Batch	Unit	RL	Result	Q
983365-15	98SY-T04A-S-6	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	3.1	<3.1	U
983365-16	98SY-T04A-W-12.1	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-17	98SY-T04B-S-1	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	2.9	<2.9	U
983365-18	98SY-T04B-W-2	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-19	98SY-T04C-S-1	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	2.8	<2.8	U
983365-20	98SY-T04C-W-3.5	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-21	98SY-T04D-S-1	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	2.9	<2.9	U
983365-22	98SY-T04E-S-1	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	2.9	<2.9	U
983365-23	98SY-T04E-W-3.5	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-24	98SY-T06A-S-2.5	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	3.1	<3.1	U
983365-25	98SY-T06A-W-7	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-26	98SY-T06B-W-8.2	Water	06/10/98	06/10/98	06/15/98	98W3485	mg/L	0.05	<0.05	U
983365-27	98SY-T06B-S-2.5	Soil	06/10/98	06/10/98	06/19/98	98W3601	mg/kg	2.5	<2.5	U
98W3601-MB-01		Soil	06/19/98	06/19/98	06/19/98	98W3601	mg/kg	2.5	<2.5	U
98W3485-MB-01		Water	06/15/98	06/15/98	06/15/98	98W3485	mg/L	0.05	<0.05	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name: CDM Federal Programs Corp. Project No: 9210-014 Anal. Method 7196
Project ID: Long Beach Naval Shipyard VOC's Service ID: 983365 Collected by:

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rec Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3365-15	98SY-T04A-S-6	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.12	<0.12	U
98-3365-16	98SY-T04A-W-12.1	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-17	98SY-T04B-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.12	<0.12	U
98-3365-18	98SY-T04B-W-2	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-19	98SY-T04C-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.11	<0.11	U
98-3365-20	98SY-T04C-W-1.5	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-21	98SY-T04D-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.12	<0.12	U
98-3365-22	98SY-T04E-S-1	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.11	<0.11	U
98-3365-23	98SY-T04E-W-1.5	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-24	98SY-T06A-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.12	<0.12	U
98-3365-25	98SY-T06A-W-7	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-26	98SY-T06B-W-8.2	Water	06/10/98	06/10/98	06/11/98	98W3110	mg/L	0.01	<0.01	U
98-3365-27	98SY-T06B-S-2.5	Soil	06/10/98	06/10/98	06/16/98	98W3503	mg/kg	0.10	<0.10	U
98W3503-MB-01		Soil	06/16/98	06/16/98	06/16/98	98W3503	mg/kg	0.1	<0.1	U
98W3110-MB-01		Water	06/11/98	06/11/98	06/11/98	98W3110	mg/L	0.01	<0.01	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

6014174

Applied P & Ch Laboratory

Wet Analysis Results for Method SM9221B

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method SM9221B
Project ID: Long Beach Naval Shipyard MOC's Service ID: 983365 Collected by:

Component Name: Total Coliform, MTF, 3X5 tubes
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3365-7	98SY-SS1M-W-10	Water	06/10/98	06/10/98	06/10/98	98W3408	MPN/100mL	2	<2	U
98W3408-MB-01		Water	06/10/98	06/10/98	06/10/98	98W3408	MPN/100mL	2	<2	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or RDL), but greater than MDL.

0014175

Applied P & Ch Laboratory

Wet Analysis Results for Method SM9221E

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method SM9221E
Project ID: Long Beach Naval Shipyard AOCs Service ID: 383365 Collected by:

Component Name: Fecal Coliform, MTF, 3X5 tubes
CAS No:

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
83365-7	SSY-SS1M-W-10	Water	06/10/98	06/10/98	06/10/98	98W3408	MPN/100mL	2	<2	U
W3408-MB-01		Water	06/10/98	06/10/98	06/10/98	98W3408	MPN/100mL	2	<2	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL.

0014176

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 10, 1998

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-RE1d-W-14
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2k-S-14
98SY-SW4a-S-2**
98SY-SW5a-S-2

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
98G2717-MB-01	6/17/98	TPH as gasoline	0.007 mg/L	All water samples in SDG 98-3365
98G2741-MB-01	6/19/98	TPH as gasoline	0.05 mg/Kg	98SY-SW2j-S-14

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-SS1m-W-10	TPH as gasoline	0.03 mg/L	0.05U mg/L

Sample 98SY-RE1d-W-14 was identified as an equipment rinsate. No total petroleum hydrocarbons as gasoline contaminants were found in this blank with the following

exceptions:

Equipment Rinsate ID	Compound	Concentration (mg/L)
98SY-RE1d-W-14	TPH as gasoline	0.06

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-SW2j-S-14 and 98SY-SW2k-S-14 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-SW2j-S-14	98SY-SW2k-S-14			
TPH as gasoline	1.3U	0.7	200 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Flag	A or P	Reason
98-3365	98SY-SW2j-S-14 98SY-SW2k-S-14	TPH as gasoline	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 98-3365

SDG	Sample	Compound	Modified Final Concentration	A or P
98-3365	98SY-SS1m-W-10	TPH as gasoline	0.05U mg/L	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

294107

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOC's	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-5	Received Date:	06/10/98
Sample ID:	**98SY-RE1D-W-14**	Sample Matrix	Water	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2717	Prep. No:	-	Anal. Time:	03:53
Data File Name:	3365.005	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.06	

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	77-123	108
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013551

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-6	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-S-6**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	23:15
Data File Name:	3365.006	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.2	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	92
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-7	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2717	Prep. No:	-	Anal. Time:	04:17
Data File Name:	3365.007	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.03	J 0.05U

Surrogates		Control Limit. %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	77-123	108
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013555

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-9	Received Date:	06/10/98
Sample ID:	**98SY-SW2H-S-26**	Sample Matrix	Soil	Moisture %:	26.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	04:04
Data File Name:	3365.009	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.4	0.7	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	101
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C013557

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-10	Received Date:	06/10/98
Sample ID:	**98SY-SW2I-S-20**	Sample Matrix	Soil	Moisture %:	21.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/18/98	Anal. Date:	06/18/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	23:39
Data File Name:	3365.010	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	0.2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	91
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2741	Prep. No:	-	Anal. Time:	12:36
Data File Name:	3365.111	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	< 1.3	~~U~~ UJ

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 160-00-4	60-123	99
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013561

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	00:25
Data File Name:	3365.012	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	0.7	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	93
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C013563

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13	Received Date:	06/10/98
Sample ID:	**98SY-SW4A-S-2**	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	00:49
Data File Name:	3365.013	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.7	0.2	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	92
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

0013565

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14	Received Date:	06/10/98
Sample ID:	**98SY-SW5A-S-2**	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2683	Prep. No:	-	Anal. Time:	01:13
Data File Name:	3365.014	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	0.2	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	88
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

0013567

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 10, 1998

LDC Report Date: July 13, 1998

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3365

Sample Identification

98SY-RE1d-W-14
98SY-SS1m-S-6
98SY-SS1m-W-10
98SY-SS2g-S-17
98SY-SW2h-S-26**
98SY-SW2i-S-20
98SY-SW2j-S-14
98SY-SW2k-S-14
98SY-SW4a-S-2**
98SY-SW5a-S-2

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Sample 98SY-RE1d-W-14 was identified as an equipment rinsate. No total petroleum hydrocarbons as extractable contaminants were found in this blank.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for the soil samples. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate for the water samples.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-SW2j-S-14 and 98SY-SW2k-S-14 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-SW2j-S-14	98SY-SW2k-S-14			
TPH as diesel	100	110	10 (≤35)	-	-
TPH as motor oil	430	520	19 (≤35)	-	-

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 98-3365

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-5	Received Date:	06/10/98
Sample ID:	**98SY-RE1D-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	06/19/98	Anal. Date:	06/23/98
Batch No:	98G2767	Prep. No:	1 of 1	Anal. Time:	05:59
Data File Name:	3365.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor Oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	61
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013652

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-6	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-S-6**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	18:33
Data File Name:	3365.006	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor Oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013654

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-7	Received Date:	06/10/98
Sample ID:	**98SY-SS1M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	06/19/98	Anal. Date:	06/23/98
Batch No:	98G2767	Prep. No:	1 of 1	Anal. Time:	06:24
Data File Name:	3365.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.02	J
2	Motor Oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	62
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013656

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-8	Received Date:	06/10/98
Sample ID:	**98SY-SS2G-S-17**	Sample Matrix	Soil	Moisture %:	29.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	18:59
Data File Name:	3365.008	Sample Amount:	20.0 g	Dilution Factor:	50
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	700	1000	
2	Motor Oil		mg/kg	700	1200	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	3950
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13658

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-9	Received Date:	06/10/98
Sample ID:	**98SY-SW2H-S-26**	Sample Matrix	Soil	Moisture %:	26.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	19:24
Data File Name:	3365.009	Sample Amount:	20.0 g	Dilution Factor:	25
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	340	1100	
2	Motor Oil		mg/kg	340	1300	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	641
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013660

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-10	Received Date:	06/10/98
Sample ID:	**98SY-SW2I-S-20**	Sample Matrix	Soil	Moisture %:	21.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	19:50
Data File Name:	3365.010	Sample Amount:	20.0 g	Dilution Factor:	25
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	320	760	
2	Motor Oil		mg/kg	320	990	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	669
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013662

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-11	Received Date:	06/10/98
Sample ID:	**98SY-SW2J-S-14**	Sample Matrix	Soil	Moisture %:	22.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/19/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	18:14
Data File Name:	3365.111	Sample Amount:	20.0 g	Dilution Factor:	5
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	64	100	
2	Motor Oil		mg/kg	64	430	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-145	176	
# of out-of-control					1	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013664

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-12	Received Date:	06/10/98
Sample ID:	**98SY-SW2K-S-14**	Sample Matrix	Soil	Moisture %:	20.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/19/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	18:51
Data File Name:	3365.112	Sample Amount:	20.0 g	Dilution Factor:	5
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	63	110	
2	Motor Oil		mg/kg	63	520	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-145	146	
# of out-of-control					1	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13666

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-13	Received Date:	06/10/98
Sample ID:	**98SY-SW4A-S-2**	Sample Matrix	Soil	Moisture %:	42.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	21:06
Data File Name:	3365.013	Sample Amount:	20.0 g	Dilution Factor:	50
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	860	1700	
2	Motor Oil		mg/kg	860	2200	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	265
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

013668

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/10/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983365	Collected by:	
		Lab Sample ID:	98-3365-14	Received Date:	06/10/98
Sample ID:	**98SY-SW5A-S-2**	Sample Matrix	Soil	Moisture %:	25.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/16/98	Anal. Date:	06/18/98
Batch No:	98G2705	Prep. No:	1 of 1	Anal. Time:	21:31
Data File Name:	3365.014	Sample Amount:	20.0 g	Dilution Factor:	50
Extract Vol.	5.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	670	1100	
2	Motor Oil		mg/kg	670	3700	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	905
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

C013670

Cooler 1 of 1 06-10-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 263 3383 Fax #: 619 268-9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA KANSAS office

Project Name/Code Long Beach Naval Shipyard AQ, Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ Regular ☐ rush: ___ days ___ hours Sampled by: SEE BELOW

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: CN	Cr+6	Metals TTLC 17	pH	Remarks
985Y-T04e-W-3.5		06-10-98	1040	Water	NaOH	1	X				
985Y-T04e-W-3.5		06-10-98	1040	Water	4°C	1		X			
985Y-T04e-W-3.5		06-10-98	1040	Water	4°C	1				X	
985Y-T04e-W-3.5		06-10-98	1040	Water	HNO_3	1			X		
985Y-T06a-W-7		06-10-98	1410	Water	NaOH	1	X				
985Y-T06a-W-7		06-10-98	1410	Water	4°C	1		X		X	
985Y-T06a-W-7		06-10-98	1410	Water	HNO_3	1			X		
985Y-T06b-W-8.2		06-10-98	1440	Water	NaOH	1	X				
985Y-T06b-W-8.2		06-10-98	1440	Water	4°C	1		X		X	
985Y-T06b-W-8.2		06-10-98	1440	Water	HNO_3	1			X		
DBoyd Jack Pace											

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D) ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None . Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by Jack Pace Date/Time 6/10/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate service or withhold delivery of any reports, if in APCL's sole discretion the terms of project have been broken.

Cooler 2 - 06-10-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen

Client: CDM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: San Diego State: CA Zip code: ~~92111~~ 92111

Bill to: LENEXA KANSAS Office

Project Name/Code Long Beach Naval Shipyard AOCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: See Below

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	VOCs 8260B	Metals TTLC17	CN	Cr+6	pH							Remarks
~~9854~~	~~FD6~~																	
9854 - TO6b - S - 2.5		06-10-98	1445	Soil	none	2	X	X	X	X	X							
9854 - TO6b - W - 8.2		06-10-98	1440	Water	HCl	2	X											
9854 - PC1a - S - 1.0		06-10-98	1620	Soil	4°C	BB ~~2~~ 1	X	X										
9854 - PC1a - W - ~~10~~ 10		06-10-98	1635	Water	HCl	2	X											
9854 - PC1a - W - ~~10~~ 10		06-10-98	1635	Water	HNO_3	1		X										
BBrd	[signature]																	

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _______ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for ______ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # __________ Temperature: [ ] Room [ ] Cold (______ °C).

Relinquished by [signature] Date/Time 6/10/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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BB

Cooler 2-05-10-98

Chain of Custody

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Please Print in pen Page 2nd of 2nd

Client: CDM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St STE 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA KANSAS Office

Project Name/Code Long Beach Naval Shipyard NOS Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: SEE BELOW

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260	Metals TTLC	CN	Cr+6	Cr++							Remarks
985Y-TØ1a	-W-12.1	06-10-98	0915	Water	HCl	2	X											
985Y-BT1a	-W-12.1	06-10-98	0820	Water	HCl	2	X											
985Y-TØ1a	-W-6 should be 5	06-10-98	0900	Water	HCl	2	X	X	X	X	X							
985Y-TØ1b	-W-2	06-10-98	0935	Water	HCl	2	X											
985Y-TØ1b	-W-1 should be 5	06-10-98	1010	Soil	None	2	X	X	X	X	X							
985Y-TØ4	E-W-3.5	06-10-98	1040	Water	HCl	2	X											
985Y-TØ4e	-W-3.5	06-10-98	1040	Water	HCl	2	X											
985Y-TØ4	c-S-1	06-10-98	1115	Soil	4°C	2	X	X	X	X	X							
985Y-TØ4	e-S-1	06-10-98	1115	Soil	4°C	2	X	X	X	X	X							
985Y-TØ4	d-S-1	06-10-98	1135	Soil	4°C	2	X	X	X	X	X							
~~985Y-SW2~~	~~g-S-1~~	~~06-10-98~~	~~1135~~	~~Sediment~~	~~4°C~~	~~1 jar~~												~~only need oily wash concrete matrix.~~
985Y-TØ6a	-S-2.5	06-10-98	1405	Soil	4°C	2	X	X	X	X	X							
985Y-TØ6a	-W-7	06-10-98	1410	Water	HCl	2	X											
EB-yd																		

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D) ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by [signature] Date/Time 06/10/98 / 1800 Received by _____ Date/Time /

Relinquished by _____ Date/Time / Received by _____ Date/Time /

APCL USE ONLY Service # Note:

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Cooler 3 - 5° - 10 - 98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas Office

Project Name/Code: Long Beach Naval Shipyard AGSS #6210-014 P.O. #

Project Address: Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: See Below

White – With report
Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: CN	Cr+6	Metals TTLC17	PH	Remarks
98SY-T04a-W-12.1		06-10-98	0815	Water	NaOH	1	X				
98SY-T04a-W-12.1		06-10-98	0815	Water	4°C	1				X	
SB 98SY-					Cr+6						
98SY-T04a-W-12.1		06-10-98	0815	water	4°C	1		X			
98SY-T04a-W-12.1		06-10-98	0815	water	HNO_3	1			X		
98SY-T04b-W-2		06-10-98	0935	water	NaOH	1	X				
98SY-T04b-W-2		06-10-98	0935	water	4°C	1				X	
98SY-T04b-W-2		06-10-98	0935	water	4°C	1		X			
98SY-T04b-W-2		06-10-98	0935	water	HNO_3	1			X		
98SY-T04c-W-3.5		06-10-98	1040	water	NaOH	1	X				
98SY-T04c-W-3.5		06-10-98	1040	water	4°C	1		X			
98SY-T04c-W-3.5		06-10-98	1040	water	4°C	1				X	
98SY-T04c-W-3.5		06-10-98	1040	water	HNO_3	1			X		
EB-Grd											
Trip Blank											

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Perez Date/Time 6/10/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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Cooler 4-06-10-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 2

Client: COM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 768 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: San Diego State: CA Zip code: 92111

Bill to: GENEVA KANSAS office

Project Name/Code Long Beach Naval Shipyard AOC Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ~~Regular~~ BB Rush: 5 days ___ hours (YES) Sampled by: SEE Below

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	VOCs 8260	SVOCs 8270	PCBs 8082	TPH 8015 m	TPH-8015 m	Metals TTLC 17	Organics 1664	Remarks
9854-SW2h-S-26		06-10-98	1405	~~Sediment~~	4°C	2	X	X	X	X	X	X	X	oily sediment
9854-SW2i-S-20		06-10-98	1435	Sediment	4°C	1	X	X	X	X	X	X	X	
9854-~~SW2~~ SW5a-~~Z~~ BD-S-2		06-10-98	1510	SEDIMENT	4°C	2	X	X	X	X	X	X	X	
9854-SW4a-S-2		06-10-98	1540	SEDIMENT	4°C	1	X	X	X	X	X	X	X	
9854-SW2j-S-14		06-10-98	1645	SEDIMENT	4°C	2	X	X	X	X	X	X	X	
9854-SW2k-S-14		06-10-98	1709	SEDIMENT	4°C	2	X	X	X	X	X	X	X	
9854-REId-W-14		06-10-98	1720	Water	4°C	1		X						
9854-REId-W-14		06-10-98	1720	Water	4°C	1			X					
9854-REId-W-14		06-10-98	1720	Water	4°C	1				X				
9854-REId-W-14		06-10-98	1720	Water	4°C	1					~~X~~	X	X	
9854-REId-W-14		06-10-98	1720	Water	HCl	2	X							
9854-REId-W-14		06-10-98	1720	Water	HCl	2				X				
9854-REId-W-14		06-10-98	1720	Water	HNO_3							X		
BBoyd Jenny Dave Bjostad														

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: ☐Regular; ☐QA/QC Report; ☐WIP; ☒Raw Data; ☐Extended Raw Data ☐CLP; ☐ACE ☐AFCEE ☒NEESA ___ (E, C or D) ☐Other _____ (Please specify)

Sample Disposal: ☐Return ☐Disposal by APCL ☐Hold for 15 DAY TAT days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐Intact; ☐Broken. Cooler Seal: ☐Intact; ☐Broken; ☐None. Tag # _____ Temperature: ☐Room ☐Cold (____ °C).

Relinquished by Dave Bjostad Date/Time 6/10/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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Cooler 4-06-10-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: COM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619 268-9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA KANSAS, OFFICE

Project Name/Code Long Beach Naval Shipyard AQIs Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☐ regular ☒ rush: 5 days ___ hours Sampled by: SEE BELOW

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270	PCBs 8082	Metals TTLC	TPH-d 8015	VOCs 8260	TPH-g 8015m	Coliform 9221 B,C	Remarks
9854-BTi-W-10		06-11-98	0820	Water	HCL	2					X			
9854-SS1m-S-6		06-11-98	1525	Soil	4°C	2	X	X	X	X	X	X		
9854-SS1m-W-10		06-10-98	1535	Water	HCL	2					X			
9854-SS1m-W-10		06-10-98	1535	Water	4°C	1		X						
9854-SS1m-W-10		06-10-98	1535	Water	HNO_3	1			X					
9854-SS1m-W-10		06-10-98	1535	Water	4°C	1				X				
9854-SS1m-W-10		06-10-98	1535	Water	4°C	1								
9854-SS1m-W-10		06-10-98	1535	Water	HCL	2						X		
9854-SS1m-W-10		06-10-98	1535	Water	Thio	2							X	
9854-SW2g-S-17		06-10-98	1135	Sediment	4°C HgCl2	1 JAR								~ 10oz. Oily Wood, Concrete mixture Prioritize TPH-d then PCBs, then metals then SVOCs
Relinquished by Dave Bjostad														

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for 15 DAY TAT days after receiving date. If not specified, samples will be discarded 45 days after samples are received.

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (____ °C).

Relinquished by 6/10 Dave Bjostad	Date/Time 6/10/98 / 1800	Received by	Date/Time /
Relinquished by	Date/Time /	Received by	Date/Time /

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 1, 1998

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-BT1j-W-10
98SY-T01a-S-5
98SY-T01a-W-7
98SY-T01b-S-5
98SY-T01b-W-9
98SY-T01c-S-5
98SY-T01c-W-10
98SY-T01d-S-5
98SY-T01d-W-12.4
98SY-T01e-S-5
98SY-T01e-W-10.7**
98SY-T01m-S-5
98SY-T01m-W-10
98SY-T02a-S-5
98SY-T02a-W-11.3
98SY-T07a-S-5
98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6
98SY-T01e-S-5MS
98SY-T01e-S-5MSD
98SY-T01e-W-10.7MS
98SY-T01e-W-10.7MSD

10 wtr
450

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 12 soil samples and 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/19/98	Chloromethane	35.0	98SY-T01a-S-5	J	A
	Bromomethane	47.5	98SY-T01b-S-5	J	
	Dibromomethane	38.6	98SY-T01c-S-5	J	
	cis-1,3-Dichloropropene	28.3	98SY-T01d-S-5	J	
	trans-1,3-Dichloropropene	26.4	98SY-T01e-S-5	J	
	Bromoform	29.1	98SY-T01m-S-5	J	
	Hexachlorobutadiene	38.5	98SY-T02a-S-5	J	
			98SY-T07a-S-5		
			98SY-T10a-S-3		
			98SY-T10b-S-3		
			98SY-T01e-S-5MS		
			98SY-T01e-S-5MSD		
			98G2747MB02		

Date	Compound	%D	Associated Samples	Flag	A or P
6/21/98	Methylene chloride Hexachlorobutadiene	29.7 25.4	98SY-BT1j-W-10 98G2774MB01	J J	A
6/21/98	Methylene chloride 1,2,3-Trichlorobenzene Hexachlorobutadiene	32.8 27.2 26.5	98SY-T01a-W-7 98SY-T01b-W-9 98SY-T01c-W-10 98SY-T01d-W-12.4 98SY-T01e-W-10.7** 98SY-T01m-W-10 98SY-T02a-W-11.3 98SY-T10a-W-12 98SY-T10b-W-12.6 98SY-T01e-W-10.7MS 98SY-T01e-W-10.7MSD 98G2774MB02	J J J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 98SY-BT1j-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
98SY-BT1j-W-10	Methylene chloride	1

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-T01a-S-5 98SY-T01a-W-7 98SY-T01b-S-5 98SY-T01b-W-9 98SY-T01c-S-5 98SY-T01c-W-10 98SY-T01d-S-5 98SY-T01d-W-12.4 98SY-T01e-S-5 98SY-T01e-W-10.7** 98SY-T01m-S-5 98SY-T01m-W-10 98SY-T02a-S-5 98SY-T02a-W-11.3 98SY-T07a-S-5 98SY-T10a-S-3 98SY-T10a-W-12 98SY-T10b-S-3 98SY-T10b-W-12.6 98G2747MB02 98G2774MB02	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-T01c-S-5 and 98SY-T01e-S-5 and samples 98SY-T01c-W-10 and 98SY-T01e-W-10.7** were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01c-W-10	98SY-T01e-W-10.7**			
cis-1,2-Dichloroethene	5U	2	200 (≤20)	J	A

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Flag	A or P	Reason
98-3406	98SY-T01a-S-5 98SY-T01b-S-5 98SY-T01c-S-5 98SY-T01d-S-5 98SY-T01e-S-5 98SY-T01m-S-5 98SY-T02a-S-5 98SY-T07a-S-5 98SY-T10a-S-3 98SY-T10b-S-3	Chloromethane Bromomethane Dibromomethane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Bromoform Hexachlorobutadiene	J J J J J J J	A	Continuing calibration (%D)
98-3406	98SY-BT1j-W-10	Methylene chloride Hexachlorobutadiene	J J	A	Continuing calibration (%D)
98-3406	98SY-T01a-W-7 98SY-T01b-W-9 98SY-T01c-W-10 98SY-T01d-W-12.4 98SY-T01e-W-10.7** 98SY-T01m-W-10 98SY-T02a-W-11.3 98SY-T10a-W-12 98SY-T10b-W-12.6	Methylene chloride 1,2,3-Trichlorobenzene Hexachlorobutadiene	J J J	A	Continuing calibration (%D)
98-3406	98SY-T01a-S-5 98SY-T01a-W-7 98SY-T01b-S-5 98SY-T01b-W-9 98SY-T01c-S-5 98SY-T01c-W-10 98SY-T01d-S-5 98SY-T01d-W-12.4 98SY-T01e-S-5 98SY-T01e-W-10.7** 98SY-T01m-S-5 98SY-T01m-W-10 98SY-T02a-S-5 98SY-T02a-W-11.3 98SY-T07a-S-5 98SY-T10a-S-3 98SY-T10a-W-12 98SY-T10b-S-3 98SY-T10b-W-12.6	All TCL compounds	None	P	Laboratory control samples
98-3406	98SY-T01c-W-10 98SY-T01e-W-10.7**	cis-1,2-Dichloroethene	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-1	Received Date:	06/11/98
Sample ID:	**98SY-BT1J-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/21/98	Anal. Date:	06/21/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	20:55
Data File Name:	3406-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

17328

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	1	~~J~~ J
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	106
2	Dibromofluoromethane	1868-53-7	86-117	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	88-109	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	95
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
3	Fluorobenzene	462-06-6	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

N9498

17329

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-2	Received Date:	06/11/98
Sample ID:	**98SY-T01A-S-5**	Sample Matrix	Soil	Moisture %:	5.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	21:21
Data File Name:	3406-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	UJ
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	UJ
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

17333

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	105
3	1,2-Dichloroethane-d4	17060-07-0	80-119	101
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	92
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

17334

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-3	Received Date:	06/11/98
Sample ID:	**98SY-T01A-W-7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/21/98	Anal. Date:	06/21/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	23:29
Data File Name:	3406-03	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	1	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

17337

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U UJ
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	106
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	111
4	Toluene-d8	2037-26-5	88-109	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	105
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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17338

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-5	Received Date:	06/11/98
Sample ID:	**98SY-T01B-S-5**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	21:48
Data File Name:	3406-05	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	UJ
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	UJ
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	95
3	1,2-Dichloroethane-d4	17060-07-0	80-119	98
4	Toluene-d8	2037-26-5	81-116	83
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	83
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	68
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-6	Received Date:	06/11/98
Sample ID:	**98SY-T01B-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	–	Anal. Time:	00:07
Data File Name:	3406-06	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U/UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	111
2	Dibromofluoromethane	1868-53-7	86-117	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	88-109	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-8	Received Date:	06/11/98
Sample ID:	**98SY-T01C-S-5**	Sample Matrix	Soil	Moisture %:	3.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	22:15
Data File Name:	3406-08	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	UJ
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	UJ
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	108
2	Dibromofluoromethane	1868-53-7	80-119	104
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	81-116	82
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	89
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	73
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-9	Received Date:	06/11/98
Sample ID:	**98SY-T01C-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	–	Anal. Time:	00:46
Data File Name:	3406-09	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	~~U~~ W
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ W
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	~~U~~ UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	100
2	Dibromofluoromethane	1868-53-7	86-117	94
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	108
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-11	Received Date:	06/11/98
Sample ID:	**98SY-T01D-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	–	Anal. Time:	22:42
Data File Name:	3406-11	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U UJ
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U UJ
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1.2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1.3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	102
2	Dibromofluoromethane	1868-53-7	80-119	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	98
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	89
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-12	Received Date:	06/11/98
Sample ID:	**98SY-T01D-W-12.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	01:24
Data File Name:	3406-12	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	~~U~~ UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	106
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	107
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-14	Received Date:	06/11/98
Sample ID:	**98SY-T01E-S-5**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	23:10
Data File Name:	3406-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	UJ
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	UJ
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	105
2	Dibromofluoromethane	1868-53-7	80-119	103
3	1,2-Dichloroethane-d4	17060-07-0	80-119	101
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

17367

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-15	Received Date:	06/11/98
Sample ID:	**98SY-T01E-W-10.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	02:02
Data File Name:	3406-15	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	2	~~J~~ J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	102
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	109
4	Toluene-d8	2037-26-5	88-109	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	98
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-17	Received Date:	06/11/98
Sample ID:	**98SY-T01M-S-5**	Sample Matrix	Soil	Moisture %:	3.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	23:37
Data File Name:	3406-17	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	~~U~~ UJ
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	~~U~~ UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	~~U~~ UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	~~U~~ UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	~~U~~ UJ
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	102
2	Dibromofluoromethane	1868-53-7	80-119	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	100
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	85
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-18	Received Date:	06/11/98
Sample ID:	**98SY-T01M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	02:41
Data File Name:	3406-18	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

17379

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	110
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	108
4	Toluene-d8	2037-26-5	88-109	98
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	95
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	85
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

µg/g

17380

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-20	Received Date:	06/11/98
Sample ID:	**98SY-T02A-S-5**	Sample Matrix	Soil	Moisture %:	13.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	–	Anal. Time:	00:04
Data File Name:	3406-20	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	UJ
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	UJ
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	< 5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	< 5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	< 5.8	U
43	Styrene	100-42-5	µg/kg	5.8	< 5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	< 5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	< 5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	< 5.8	U
47	Toluene	108-88-3	µg/kg	5.8	< 5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	< 5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	< 5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	< 5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	< 5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	< 5.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	< 5.8	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	< 5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	< 5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	< 5.8	U
57	Vinyl chloride	75-01-4	µg/kg	5.8	< 5.8	U
58	o-Xylene	95-47-6	µg/kg	5.8	< 5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	< 5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	< 5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	101
2	Dibromofluoromethane	1868-53-7	80-119	103
3	1,2-Dichloroethane-d4	17060-07-0	80-119	103
4	Toluene-d8	2037-26-5	81-116	82
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-21	Received Date:	06/11/98
Sample ID:	**98SY-T02A-W-11.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	03:20
Data File Name:	3406-21	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	1	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	UW
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U UJ
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	98
2	Dibromofluoromethane	1868-53-7	86-117	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	95
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	107
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-23	Received Date:	06/11/98
Sample ID:	**98SY-T07A-S-5**	Sample Matrix	Soil	Moisture %:	7.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	–	Anal. Time:	00:31
Data File Name:	3406-23	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	~~U~~ UJ
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	~~U~~ UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	~~U~~ UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	~~U~~ UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	~~U~~ UJ
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	103
2	Dibromofluoromethane	1868-53-7	80-119	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	100
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-26	Received Date:	06/11/98
Sample ID:	**98SY-T10A-S-3**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	00:59
Data File Name:	3406-26	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U UJ
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U UJ
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3.5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	104
3	1,2-Dichloroethane-d4	17060-07-0	80-119	100
4	Toluene-d8	2037-26-5	81-116	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	81
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-27	Received Date:	06/11/98
Sample ID:	**98SY-T10A-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	03:58
Data File Name:	3406-27	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	111
2	Dibromofluoromethane	1868-53-7	86-117	104
3	1,2-Dichloroethane-d4	17060-07-0	80-119	118
4	Toluene-d8	2037-26-5	88-109	107
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	90
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2747	Prep. No:	-	Anal. Time:	05:04
Data File Name:	3406-28A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	~~U~~ UJ
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	~~U~~ UJ
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	~~U~~ UJ
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	~~U~~ UJ
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	~~U~~ UJ
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	102
2	Dibromofluoromethane	1868-53-7	80-119	113
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	81-116	84
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-29	Received Date:	06/11/98
Sample ID:	**98SY-T10B-W-12.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2774	Prep. No:	-	Anal. Time:	04:37
Data File Name:	3406-29	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	99
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	107
4	Toluene-d8	2037-26-5	88-109	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/27/98	Bis(2-chloroethyl) ether	33.0	98SY-T10a-S-3 98SY-T10b-S-3 98G2840MB01	J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Flag	A or P	Reason
98-3406	98SY-T10a-S-3 98SY-T10b-S-3	Bis(2-chloroethyl) ether	J	A	Continuing calibration (%D)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-26	Received Date:	06/11/98
Sample ID:	**98SY-T10A-S-3**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/27/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	21:31
Data File Name:	3406-26	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U
64	Carbazole	86-74-8	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	75
2	2-Fluorophenol	367-12-4	25-120	38
3	Nitrobenzene-d5	4165-60-0	23-119	74
4	Phenol-d5	4165-62-2	25-112	79
5	Terphenyl-d14	1718-51-0	19-136	95
6	2,4,6-Tribromophenol	118-79-6	19-121	70
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	124
2	Chrysene-d12	1719-03-5	50-200	121
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	116
5	Perylene-d12	1520-96-3	50-200	111
6	Phenanthrene-d10	1517-22-2	50-200	120
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-27	Received Date:	06/11/98
Sample ID:	**98SY-T10A-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	06/16/98	Anal. Date:	06/21/98
Batch No:	98G2708	Prep. No:	1 of 1	Anal. Time:	14:30
Data File Name:	3406-27A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1.2.3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1.2.4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2.4.5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2.4.6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	70
2	2-Fluorophenol	367-12-4	21- 99	67
3	Nitrobenzene-d5	4165-60-0	35-113	81
4	Phenol-d5	4165-62-2	10- 93	74
5	Terphenyl-d14	1718-51-0	33-140	89
6	2.4.6-Tribromophenol	118-79-6	10-122	64
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	128
2	Chrysene-d12	1719-03-5	50-200	125
3	1.4-Dichlorobenzene-d4	3855-82-1	50-200	123
4	Naphthalene-d8	1146-65-2	50-200	133
5	Perylene-d12	1520-96-3	50-200	119
6	Phenanthrene-d10	1517-22-2	50-200	129
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/27/98
Batch No:	98G2840	Prep. No:	1 of 1	Anal. Time:	22:09
Data File Name:	3406-28	Sample Amount:	30.0 g	Dilution Factor:	5
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2800	< 2800	U
2	Acenaphthylene	208-96-8	µg/kg	2800	< 2800	U
3	Anthracene	120-12-7	µg/kg	2800	< 2800	U
4	Benz(a)anthracene	56-55-3	µg/kg	2800	< 2800	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2800	< 2800	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2800	< 2800	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2800	< 2800	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2800	< 2800	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2800	< 2800	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2800	< 2800	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2800	< 2800	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2800	< 2800	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2800	< 2800	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2800	< 2800	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	5500	< 5500	U
16	4-Chloroaniline	106-47-8	µg/kg	5500	< 5500	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2800	< 2800	U
18	2-Chlorophenol	95-57-8	µg/kg	2800	< 2800	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2800	< 2800	U
20	Chrysene	218-01-9	µg/kg	2800	< 2800	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2800	< 2800	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2800	< 2800	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2800	< 2800	U
24	Dibenzofuran	132-64-9	µg/kg	2800	< 2800	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2800	< 2800	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2800	< 2800	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2800	< 2800	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	5500	< 5500	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2800	< 2800	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2800	< 2800	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2800	< 2800	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2800	< 2800	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	14000	< 14000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	14000	< 14000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2800	< 2800	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2800	< 2800	U
37	Fluoranthene	206-44-0	µg/kg	2800	< 2800	U
38	Fluorene	86-73-7	µg/kg	2800	< 2800	U
39	Hexachlorobenzene	118-74-1	µg/kg	2800	< 2800	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2800	< 2800	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2800	< 2800	U
42	Hexachloroethane	67-72-1	µg/kg	2800	< 2800	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2800	< 2800	U
44	Isophorone	78-59-1	µg/kg	2800	< 2800	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2800	< 2800	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2800	< 2800	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2800	< 2800	U
48	Naphthalene	91-20-3	µg/kg	2800	< 2800	U
49	2-Nitroaniline	88-74-4	µg/kg	14000	< 14000	U
50	3-Nitroaniline	99-09-2	µg/kg	14000	< 14000	U
51	4-Nitroaniline	100-01-6	µg/kg	14000	< 14000	U
52	Nitrobenzene	98-95-3	µg/kg	2800	< 2800	U
53	2-Nitrophenol	88-75-5	µg/kg	2800	< 2800	U
54	4-Nitrophenol	100-02-7	µg/kg	14000	< 14000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2800	< 2800	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2800	< 2800	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	14000	< 14000	U
58	Phenanthrene	85-01-8	µg/kg	2800	< 2800	U
59	Phenol	108-95-2	µg/kg	2800	< 2800	U
60	Pyrene	129-00-0	µg/kg	2800	< 2800	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2800	< 2800	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2800	< 2800	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2800	< 2800	U
64	Carbazole	86-74-8	µg/kg	2800	< 2800	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	63
2	2-Fluorophenol	367-12-4	25-120	62
3	Nitrobenzene-d5	4165-60-0	23-119	58
4	Phenol-d5	4165-62-2	25-112	62
5	Terphenyl-d14	1718-51-0	19-136	80
6	2,4,6-Tribromophenol	118-79-6	19-121	52
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	137
2	Chrysene-d12	1719-03-5	50-200	129
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	128
4	Naphthalene-d8	1146-65-2	50-200	136
5	Perylene-d12	1520-96-3	50-200	119
6	Phenanthrene-d10	1517-22-2	50-200	131
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-29	Received Date:	06/11/98
Sample ID:	**98SY-T10B-W-12.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	06/16/98	Anal. Date:	06/22/98
Batch No:	98G2708	Prep. No:	1 of 1	Anal. Time:	15:20
Data File Name:	3406-29A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	74
2	2-Fluorophenol	367-12-4	21- 99	66
3	Nitrobenzene-d5	4165-60-0	35-113	76
4	Phenol-d5	4165-62-2	10- 93	69
5	Terphenyl-d14	1718-51-0	33-140	89
6	2,4,6-Tribromophenol	118-79-6	10-122	69
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	96
2	Chrysene-d12	1719-03-5	50-200	115
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	93
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for the soil samples. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M1PA-S-0 (All soil samples in SDG 98-3406)	Aroclor-1016 Aroclor-1260	- 202 (30-129)	- -	60 (≤37) 68 (≤37)	J J	A

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate for the water samples.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Flag	A or P	Reason
98-3406	98SY-T10a-S-3 98SY-T10b-S-3	Aroclor-1016 Aroclor-1260	J J	A	Matrix spike/Matrix spike duplicates (%R)(RPD)

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-26	Received Date:	06/11/98
Sample ID:	**98SY-T10A-S-3**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	03:17
Data File Name:	3406.026	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	55	<55	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	55	<55	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	55	<55	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	55	<55	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	<27	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	74
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-27	Received Date:	06/11/98
Sample ID:	**98SY-T10A-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	06/18/98	Anal. Date:	06/20/98
Batch No:	98G2733	Prep. No:	1 of 1	Anal. Time:	11:16
Data File Name:	3406.027	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	98
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6/9/98

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	04:58
Data File Name:	3406.028	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	550	< 550	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	550	< 550	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	550	< 550	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	550	< 550	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	280	< 280	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	280	150	~~J~~ J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	68
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	54
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-29	Received Date:	06/11/98
Sample ID:	**98SY-T10B-W-12.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	06/18/98	Anal. Date:	06/20/98
Batch No:	98G2733	Prep. No:	1 of 1	Anal. Time:	11:41
Data File Name:	3406.029	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	105
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: October 14, 1998

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T01a-S-5
98SY-T01a-W-7
98SY-T01b-S-5
98SY-T01b-W-9
98SY-T01c-S-5
98SY-T01c-W-10**
98SY-T01d-S-5
98SY-T01d-W-12.4
98SY-T01e-S-5
98SY-T01e-W-10.7
98SY-T01m-S-5
98SY-T01m-W-10
98SY-T02a-S-5
98SY-T02a-W-11.3
98SY-T07a-S-5
98SY-T08a-S-1
98SY-T08b-S-1
98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6
98SY-T11a-S-1
98SY-T11a-W-15.3
98SY-T01a-S-5MS
98SY-T01a-S-5DUP
98SY-T01e-W-10.7MS
98SY-T01e-W-10.7DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 15 soil samples and 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Beryllium Copper Lead Selenium Zinc	0.2 ug/L 2.8 ug/L -1.1 ug/L 2.8 ug/L -0.7 ug/L	All samples in SDG 98-3406
CCB1	Barium Beryllium Cadmium Copper Selenium Zinc Molybdenum	2.1 ug/L 0.2 ug/L 0.2 ug/L 3.4 ug/L 1.7 ug/L 1.3 ug/L 0.7 ug/L	All samples in SDG 98-3406
CCB2	Antimony Arsenic Barium Beryllium Cadmium Copper Thallium Zinc	2.3 ug/L 1.2 ug/L 1.8 ug/L 0.2 ug/L 0.2 ug/L 3.2 ug/L 2.1 ug/L 1.0 ug/L	All samples in SDG 98-3406
CCB3	Antimony Barium Cadmium Copper	1.9 ug/L 1.6 ug/L 0.1 ug/L 2.4 ug/L	All samples in SDG 98-3406

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Barium Beryllium Copper Vanadium	0.080 mg/Kg 0.0059 mg/Kg 0.072 mg/Kg -0.0498 mg/Kg	All samples in SDG 98-3406
CCB1	Arsenic Barium Copper Thallium Zinc Molybdenum	2.2 ug/L 0.8 ug/L 0.5 ug/L 1.5 ug/L 1.0 ug/L 1.1 ug/L	All samples in SDG 98-3406
PB (prep blank)	Arsenic Chromium Zinc Molybdenum	1.8 ug/L 0.80 ug/L 1.773 ug/L -2.277 ug/L	All samples in SDG 98-3406
ICB	Barium Beryllium Chromium Cobalt Copper Nickel Selenium Zinc Molybdenum	1.2 ug/L 0.4 ug/L 2.0 ug/L 1.2 ug/L 2.1 ug/L 1.3 ug/L 3.3 ug/L 3.6 ug/L -1.5 ug/L	All samples in SDG 98-3406
CCB1	Arsenic Barium Beryllium Chromium Cobalt Copper Nickel Zinc Molybdenum	1.1 ug/L 1.1 ug/L 0.2 ug/L 1.7 ug/L 1.1 ug/L 1.2 ug/L 0.8 ug/L 1.4 ug/L -1.3 ug/L	All samples in SDG 98-3406
CCB2	Cobalt Selenium Zinc Molybdenum	0.8 ug/L 3.9 ug/L 1.0 ug/L -1.7 ug/L	All samples in SDG 98-3406
CCB3	Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Selenium Vanadium Zinc	2.2 ug/L 0.3 ug/L 0.3 ug/L 1.5 ug/L 1.5 ug/L 1.5 ug/L 1.1 ug/L 4.9 ug/L 0.7 ug/L 1.5 ug/L	All samples in SDG 98-3406

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs.

The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-T01a-S-5	Antimony Cadmium Molybdenum	0.12 mg/Kg 0.020 mg/Kg 0.26 mg/Kg	0.12U mg/Kg 0.020U mg/Kg 0.26U mg/Kg
98SY-T01a-W-7	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium Vanadium	3.6 ug/L 5.9 ug/L 1.2 ug/L 6.4 ug/L 5.3 ug/L 5.9 ug/L 10.3 ug/L 1.1 ug/L	3.6U ug/L 5.9U ug/L 1.2U ug/L 6.4U ug/L 5.3U ug/L 5.9U ug/L 10.3U ug/L 1.1U ug/L
98SY-T01b-S-5	Cadmium Molybdenum	0.016 mg/Kg 0.10 mg/Kg	0.016U mg/Kg 0.10U mg/Kg
98SY-T01b-W-9	Arsenic Chromium Cobalt Copper Nickel Selenium Zinc	3.6 ug/L 4.5 ug/L 1.0 ug/L 5.2 ug/L 4.7 ug/L 5.1 ug/L 1.4 ug/L	3.6U ug/L 4.5U ug/L 1.0U ug/L 5.2U ug/L 4.7U ug/L 5.1U ug/L 1.4U ug/L
98SY-T01c-W-10**	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	4.3 ug/L 4.1 ug/L 2.4 ug/L 9.7 ug/L 2.1 ug/L 3.3 ug/L 2.3 ug/L	4.3U ug/L 4.1U ug/L 2.4U ug/L 9.7U ug/L 2.1U ug/L 3.3U ug/L 2.3U ug/L
98SY-T01d-S-5	Cadmium	0.0074 mg/Kg	0.0074U mg/Kg
98SY-T01d-W-12.4	Arsenic Chromium Cobalt Copper Nickel Thallium Zinc	4.9 ug/L 4.4 ug/L 2.3 ug/L 10.9 ug/L 4.6 ug/L 1.5 ug/L 1.8 ug/L	4.9U ug/L 4.4U ug/L 2.3U ug/L 10.9U ug/L 4.6U ug/L 1.5U ug/L 1.8U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-T01e-W-10.7	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium Zinc	4.3 ug/L 4.9 ug/L 0.73 ug/L 9.5 ug/L 3.9 ug/L 2.5 ug/L 2.8 ug/L 6.4 ug/L	4.3U ug/L 4.9U ug/L 0.73U ug/L 9.5U ug/L 3.9U ug/L 2.5U ug/L 2.8U ug/L 6.4U ug/L
98SY-T01m-S-5	Cadmium	0.0056 mg/Kg	0.0056U mg/Kg
98SY-T01m-W-10	Arsenic Chromium Copper Nickel Selenium Thallium	4.7 ug/L 3.7 ug/L 9.2 ug/L 1.7 ug/L 5.4 ug/L 2.9 ug/L	4.7U ug/L 3.7U ug/L 9.2U ug/L 1.7U ug/L 5.4U ug/L 2.9U ug/L
98SY-T02a-S-5	Cadmium Molybdenum	0.016 mg/Kg 0.14 mg/Kg	0.016U mg/Kg 0.14U mg/Kg
98SY-T02a-W-11.3	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	7.7 ug/L 5.6 ug/L 3.5 ug/L 12.2 ug/L 3.3 ug/L 7.1 ug/L 2.3 ug/L	7.7U ug/L 5.6U ug/L 3.5U ug/L 12.2U ug/L 3.3U ug/L 7.1U ug/L 2.3U ug/L
98SY-T07a-S-5	Cadmium Selenium	0.016 mg/Kg 0.10 mg/Kg	0.016U mg/Kg 0.10U mg/Kg
98SY-T08a-S-1	Cadmium	0.0060 mg/Kg	0.0060U mg/Kg
98SY-T08b-S-1	Cadmium Selenium	0.059 mg/Kg 0.11 mg/Kg	0.059U mg/Kg 0.11U mg/Kg
98SY-T10a-S-3	Molybdenum	0.24 mg/Kg	0.24U mg/Kg
98SY-T10a-W-12	Arsenic Chromium Cobalt Copper Nickel Selenium	6.9 ug/L 4.3 ug/L 1.6 ug/L 10.9 ug/L 1.6 ug/L 4.7 ug/L	6.9U ug/L 4.3U ug/L 1.6U ug/L 10.9U ug/L 1.6U ug/L 4.7U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-T10b-W-12.6	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	6.4 ug/L 4.4 ug/L 1.7 ug/L 10.8 ug/L 2.1 ug/L 6.3 ug/L 1.9 ug/L	6.4U ug/L 4.4U ug/L 1.7U ug/L 10.8U ug/L 2.1U ug/L 6.3U ug/L 1.9U ug/L
98SY-T11a-S-1	Cadmium	0.043 mg/Kg	0.043U mg/Kg
98SY-T11a-W-15.3	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	8.6 ug/L 4.3 ug/L 2.6 ug/L 11.8 ug/L 2.8 ug/L 8.3 ug/L 2.1 ug/L	8.6U ug/L 4.3U ug/L 2.6U ug/L 11.8U ug/L 2.8U ug/L 8.3U ug/L 2.1U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
98SY-T01e-W-10.7DUP (All water samples in SDG 98-3406)	Copper Zinc	- -	21.8 ug/L (≤10) 11.9 ug/L (≤5)	J J	A

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent

recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
98SY-T01e-W-10.7L	Barium	11.4 (≤10)	All water samples in SDG 98-3406	J (all detects)	A

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 98SY-T01c-S-5 and 98SY-T01e-S-5 and samples 98SY-T01c-W-10** and 98SY-T01e-W-10.7 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	*98SY-T01c-S-5	*98SY-T01e-S-5			
Arsenic	2.3	2.2	4 (≤35)	-	-
Barium	22.9	31.9	33 (≤35)	-	-
Chromium	8.5	10.2	18 (≤35)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	*98SY-T01c-S-5	*98SY-T01e-S-5			
Cobalt	3.3	3.4	3 (≤35)	-	-
Copper	4.2	4.4	5 (≤35)	-	-
Lead	2.	3.4	27 (≤35)	-	-
Nickel	5.6	6.4	13 (≤35)	-	-
Vanadium	14.8	16.1	8 (≤35)	-	-
Zinc	18.8	19.8	5 (≤35)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01c-W-10**	98SY-T01e-W-10.7			
Arsenic	4.3	4.3	0 (≤20)	-	-
Barium	85.4	68.6	22 (≤20)	J	A
Chromium	4.1	4.9	18 (≤20)	-	-
Cobalt	2.4	0.73	107 (≤20)	J	A
Copper	9.7	9.5	2 (≤20)	-	-
Nickel	2.1	3.9	60 (≤20)	J	A
Selenium	3.3	2.5	28 (≤20)	J	A
Thallium	2.3	2.8	20 (≤20)	-	-
Zinc	0.9U	6.4	200 (≤20)	J	A
Molybdenum	9.1	5.8	44 (≤20)	J	A

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 98-3406

SDG	Sample	Analyte	Flag	A or P	Reason
98-3406	98SY-T01a-W-7 98SY-T01b-W-9 98SY-T01c-W-10** 98SY-T01d-W-12.4 98SY-T01e-W-10.7 98SY-T01m-W-10 98SY-T02a-W-11.3 98SY-T10a-W-12 98SY-T10b-W-12.6 98SY-T11a-W-15.3	Copper Zinc	J J	A	Duplicate sample analysis (difference)
98-3406	98SY-T01a-W-7 98SY-T01b-W-9 98SY-T01c-W-10** 98SY-T01d-W-12.4 98SY-T01e-W-10.7 98SY-T01m-W-10 98SY-T02a-W-11.3 98SY-T10a-W-12 98SY-T10b-W-12.6 98SY-T11a-W-15.3	Barium	J (all detects)	A	ICP serial dilution (%D)
98-3406	98SY-T01c-W-10** 98SY-T01e-W-10.7	Barium Cobalt Nickel Selenium Zinc Molybdenum	J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 98-3406

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3406	98SY-T01a-S-5	Antimony Cadmium Molybdenum	0.12U mg/Kg 0.020U mg/Kg 0.26U mg/Kg	A
98-3406	98SY-T01a-W-7	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium Vanadium	3.6U ug/L 5.9U ug/L 1.2U ug/L 6.4U ug/L 5.3U ug/L 5.9U ug/L 10.3U ug/L 1.1U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3406	98SY-T01b-S-5	Cadmium Molybdenum	0.016U mg/Kg 0.10U mg/Kg	A
98-3406	98SY-T01b-W-9	Arsenic Chromium Cobalt Copper Nickel Selenium Zinc	3.6U ug/L 4.5U ug/L 1.0U ug/L 5.2U ug/L 4.7U ug/L 5.1U ug/L 1.4U ug/L	A
98-3406	98SY-T01c-W-10**	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	4.3U ug/L 4.1U ug/L 2.4U ug/L 9.7U ug/L 2.1U ug/L 3.3U ug/L 2.3U ug/L	A
98-3406	98SY-T01d-S-5	Cadmium	0.0074U mg/Kg	A
98-3406	98SY-T01d-W-12.4	Arsenic Chromium Cobalt Copper Nickel Thallium Zinc	4.9U ug/L 4.4U ug/L 2.3U ug/L 10.9U ug/L 4.6U ug/L 1.5U ug/L 1.8U ug/L	A
98-3406	98SY-T01e-W-10.7	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium Zinc	4.3U ug/L 4.9U ug/L 0.73U ug/L 9.5U ug/L 3.9U ug/L 2.5U ug/L 2.8U ug/L 6.4U ug/L	A
98-3406	98SY-T01m-S-5	Cadmium	0.0056U mg/Kg	A
98-3406	98SY-T01m-W-10	Arsenic Chromium Copper Nickel Selenium Thallium	4.7U ug/L 3.7U ug/L 9.2U ug/L 1.7U ug/L 5.4U ug/L 2.9U ug/L	A
98-3406	98SY-T02a-S-5	Cadmium Molybdenum	0.016U mg/Kg 0.14U mg/Kg	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3406	98SY-T02a-W-11.3	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	7.7U ug/L 5.6U ug/L 3.5U ug/L 12.2U ug/L 3.3U ug/L 7.1U ug/L 2.3U ug/L	A
98-3406	98SY-T07a-S-5	Cadmium Selenium	0.016U mg/Kg 0.10U mg/Kg	A
98-3406	98SY-T08a-S-1	Cadmium	0.0060U mg/Kg	A
98-3406	98SY-T08b-S-1	Cadmium Selenium	0.059U mg/Kg 0.11U mg/Kg	A
98-3406	98SY-T10a-S-3	Molybdenum	0.24U mg/Kg	A
98-3406	98SY-T10a-W-12	Arsenic Chromium Cobalt Copper Nickel Selenium	6.9U ug/L 4.3U ug/L 1.6U ug/L 10.9U ug/L 1.6U ug/L 4.7U ug/L	A
98-3406	98SY-T10b-W-12.6	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	6.4U ug/L 4.4U ug/L 1.7U ug/L 10.8U ug/L 2.1U ug/L 6.3U ug/L 1.9U ug/L	A
98-3406	98SY-T11a-S-1	Cadmium	0.043U mg/Kg	A
98-3406	98SY-T11a-W-15.3	Arsenic Chromium Cobalt Copper Nickel Selenium Thallium	8.6U ug/L 4.3U ug/L 2.6U ug/L 11.8U ug/L 2.8U ug/L 8.3U ug/L 2.1U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-2	Received Date:	06/11/98
Sample ID:	**98SY-T01A-S-5**	Sample Matrix	Soil	Moisture %:	5.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	0.12	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	2.3		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	30.3		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.020	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	19.2		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	2.6		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.53	3.6		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.6		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	< 0.023	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.26		P	U	98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	10.1		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	< 0.079	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.53	< 0.056	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	< 0.079	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	11.9		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	14.6		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

LQ698

018317

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-4

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98

Sample ID: **98SY-T01A-W-7**
Sample Type: Field Sample

Sample Matrix: Water
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	3.6	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	80.2		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	5.9		P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.2	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	6.4	B	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	*	1.6	B	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	11.5		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	5.3		P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	5.9	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	10.3		P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	1.1	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	18.5		P	J	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

w9697

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-5 Received Date: 06/11/98
Sample ID: **98SY-T01B-S-5** Sample Matrix Soil Moisture %: 5.9
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	<0.10	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	2.0		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	32.2		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.016	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	10.8		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	2.5		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.53	3.4		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.4		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.11	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.10	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	6.3		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	<0.080	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.53	<0.056	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	<0.080	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	11.2		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	15.0		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

w9698

18319

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 5210-014
Service ID: 983406
Lab Sample ID: 98-3406-7
Sample Matrix Water

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98
Moisture %: -

Sample ID: **98SY-T01B-W-9**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	3.6	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	94.2		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	< 0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	< 0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.5	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.0	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	5.2	B	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	3	< 0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	< 0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	8.9		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	4.7	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	5.1	B	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	< 0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	< 1.5	U	P		98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	< 0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	1.4	B	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

9698

0018320

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-8 Received Date: 06/11/98
Sample ID: **98SY-T01C-S-5** Sample Matrix Soil Moisture %: 3.9
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.099	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.3		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.0	22.9		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	8.5		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	3.3		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.52	4.2		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.6		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	< 0.023	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	< 0.03	U	P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	5.6		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.52	< 0.055	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	14.8		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	18.8		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

6/9/98

18321

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-10 Received Date: 06/11/98
Sample ID: **98SY-T01C-W-10** Sample Matrix Water Moisture %: -
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	4.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	85.4		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.1	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	2.4	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	9.7	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	1	<0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	9.1		P	J	98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	2.1	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	3.3	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	2.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	<0.9	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4698

18322

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-11 Received Date: 06/11/98
Sample ID: **98SY-T01D-S-5** Sample Matrix Soil Moisture %: 3.4
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	<0.098	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.2		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.0	27.4		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0074	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	10.1		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	3.6		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.52	4.6		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.2		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.025	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	<0.03	U	P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	6.5		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	<0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.52	<0.055	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	<0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	16.0		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	19.1		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4968

18323

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-13 Received Date: 06/11/98
Sample ID: **98SY-T01D-W-12.4** Sample Matrix Water Moisture %: -
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	4.9	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	108		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	< 0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	< 0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.4	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	2.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	10.9		P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	3	< 0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	< 0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	10.4		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	4.6	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	< 2.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	< 0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	1.5	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	< 0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	1.8	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
1 Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
2 Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

u9698

18324

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-14
Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98
Sample ID: **98SY-T01E-S-5**
Sample Matrix Soil
Moisture %: 3.3
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.098	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.2		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.0	31.9		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	10.2		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	3.4		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.52	1.4		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	3.4		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	< 0.022	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	< 0.03	U	P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	6.4		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.52	< 0.055	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	16.1		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	19.8		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

0/6/98

18325

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-16

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98

Sample ID: **98SY-T01E-W-10.7**
Sample Type: Field Sample

Sample Matrix: Water
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	4.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	68.6		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.9	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	0.73	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	0.5	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	1	<0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	5.8		P	J	98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	3.9	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	2.5	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	2.8	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	6.4		P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/6/98

18376

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 5210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-17 Received Date: 06/11/98
Sample ID: **98SY-T01M-S-5** Sample Matrix Soil Moisture %: 3.5
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.098	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.2		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.0	65.4		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0056	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	16.7		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	4.4		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.52	6.4		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.5		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	< 0.022	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	1.3		P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	8.6		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.52	0.055	B	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	< 0.078	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	19.8		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	20.0		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4698

18327

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-19

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98

Sample ID: **98SY-T01M-W-10**
Sample Type: Field Sample

Sample Matrix: Water
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	4.7	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	80.6		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	3.7	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	<0.46	U	P		98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	9.2	B	P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	3	<0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	8.3		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	1.7	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	5.4	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	2.9	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	<0.9	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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1832

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-20
Sample Matrix Soil

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98
Moisture %: 13.6

Sample ID: **98SY-T02A-S-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.8	<0.11	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.35	4.1		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.2	74.7		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.23	<0.006	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.23	0.016	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.58	14.6		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.58	8.2		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.58	10.9		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.23	3.4		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.23	0.031	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.23	0.14	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.35	11.1		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.58	<0.087	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.58	0.12	B	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.8	<0.087	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.58	27.7		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.58	44.2		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

ug/kg ER

1832

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-22

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98

Sample ID: **98SY-T02A-W-11.3**
Sample Type: Field Sample

Sample Matrix: Water
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	7.7		P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	170		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	< 0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	< 0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	5.6		P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	3.5	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	12.2		P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	3	< 0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	< 0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	6.1		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	3.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	7.1	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	< 0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	2.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	< 0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	< 0.9	~~U~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

9698

1833

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-23	Received Date:	06/11/98
Sample ID:	**98SY-T07A-S-5**	Sample Matrix	Soil	Moisture %:	7.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	<0.10	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	1.9		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	25.6		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	0.016	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.54	4.9		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.54	2.4		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.54	3.6		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.22	0.48		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	<0.024	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.22	<0.03	U	P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	3.2		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.54	0.10	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.54	<0.058	U	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.4	<0.081	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.54	10.5		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.54	13.0		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4698

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-24	Received Date:	06/11/98
Sample ID:	98SY-T08A-S-1	Sample Matrix	Soil	Moisture %:	3.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.098	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	4.4		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.0	88.4		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0060	~~B~~	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	11.4		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	6.5		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.52	11.3		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	4.1		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.050	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.35		P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	8.4		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.077	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.52	0.087	B	P		98M1603M	06/18/98	06/18/98	1	60
Thallium	7440-28-0	mg/kg	5.2	< 0.077	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	27.0		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	33.3		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

2968

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-25 Received Date: 06/11/98
Sample ID: **98SY-T08B-S-1** Sample Matrix Soil Moisture %: 12.5
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	< 0.11	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.34	4.3		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	88.2		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.23	< 0.006	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.23	0.059	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.57	18.3		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.57	9.8		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.57	16.7		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.23	3.6		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.23	< 0.028	U	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.23	0.35		P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.34	14.3		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.57	0.11	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.57	0.097	B	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.7	< 0.086	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.57	34.9		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.57	51.2		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-26 Received Date: 06/11/98
Sample ID: **98SY-T10A-S-3** Sample Matrix Soil Moisture %: 3.5
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	<0.10	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	3.4		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	64.0		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.55	12.5		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.55	6.8		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.55	10.2		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.22	2.4		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.0340	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.22	0.24		P	U	98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	9.6		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.55	<0.082	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.55	<0.058	U	P		98M1603M	06/18/98	06/18/98	1	601
Thallium	7440-28-0	mg/kg	5.5	<0.082	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.55	25.8		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.55	34.9		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

NQ 198

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-27
Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98
Sample ID: **98SY-T10A-W-12**
Sample Matrix: Water
Moisture %: -
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	6.9		P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	105		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	< 0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	< 0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.6	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	10.9		P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	5	< 0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	< 0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	6.3		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	1.6	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	4.7	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	< 0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	< 1.5	U	P		98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	< 0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	< 0.9	U	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	3.8	B	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	4.2		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	114		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	< 0.006	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	0.56		P		98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.55	38.1		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.55	9.4		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.55	52.1		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.22	35.8		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.96		CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.22	0.32		P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	14.3		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.55	< 0.083	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.55	0.070	B	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.5	< 0.083	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.55	35.1		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.55	142		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/6/98

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Collection Date: 06/11/98
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd
Lab Sample ID: 98-3406-29 Received Date: 06/11/98
Sample ID: **98SY-T10B-W-12.6** Sample Matrix Water Moisture %: -
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	6.4		P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	136		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.4	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.7	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	10.8		P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	5	<0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	5.8		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	2.1	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	6.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	1.9	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	<0.9	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

9698

1837

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983406
Lab Sample ID: 98-3406-30

Collection Date: 06/11/98
Collected by: B Boyd
Received Date: 06/11/98

Sample ID: **98SY-T11A-S-1**
Sample Type: Field Sample

Sample Matrix: Soil
Moisture %: 4.9

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	<0.10	U	P		98M1603M	06/18/98	06/18/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	3.9		P		98M1603M	06/18/98	06/18/98	1	6010
Barium	7440-39-3	mg/kg	1.1	75.0		P		98M1603M	06/18/98	06/18/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1603M	06/18/98	06/18/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.043	B	P	U	98M1603M	06/18/98	06/18/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	15.8		P		98M1603M	06/18/98	06/18/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	7.0		P		98M1603M	06/18/98	06/18/98	1	6010
Copper	7440-50-8	mg/kg	0.53	12.6		P		98M1603M	06/18/98	06/18/98	1	6010
Lead	7439-92-1	mg/kg	0.21	5.1		P		98M1603M	06/18/98	06/18/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.093	B	CV		98M1600D	06/17/98	06/17/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.33		P		98M1603M	06/18/98	06/18/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	10.4		P		98M1603M	06/18/98	06/18/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	<0.079	U	P		98M1603M	06/18/98	06/18/98	1	6010
Silver	7440-22-4	mg/kg	0.53	0.060	B	P		98M1603M	06/18/98	06/18/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	<0.079	U	P		98M1603M	06/18/98	06/18/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	31.0		P		98M1603M	06/18/98	06/18/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	40.4		P		98M1603M	06/18/98	06/18/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

24698

1833

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-31	Received Date:	06/11/98
Sample ID:	**98SY-T11A-W-15.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1589L	06/16/98	06/16/98	1	6010
Arsenic	7440-38-2	µg/L	5	8.6		P	U	98M1589L	06/16/98	06/16/98	1	6010
Barium	7440-39-3	µg/L	10	191		P	J	98M1589L	06/16/98	06/16/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1589L	06/16/98	06/16/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1589L	06/16/98	06/16/98	1	6010
Chromium	7440-47-3	µg/L	5	4.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Cobalt	7440-48-4	µg/L	5	2.6	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Copper	7440-50-8	µg/L	10	11.8		P	UJ	98M1589L	06/16/98	06/16/98	1	6010
Lead	7439-92-1	µg/L	5	<0.89	U	P		98M1589L	06/16/98	06/16/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1593D	06/16/98	06/16/98	1	7470
Molybdenum	7439-98-7	µg/L	5	6.2		P		98M1589L	06/16/98	06/16/98	1	6010
Nickel	7440-02-0	µg/L	5	2.8	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Selenium	7782-49-2	µg/L	10	8.3	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1589L	06/16/98	06/16/98	1	6010
Thallium	7440-28-0	µg/L	10	2.1	~~B~~	P	U	98M1589L	06/16/98	06/16/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1589L	06/16/98	06/16/98	1	6010
Zinc	7440-66-6	µg/L	5	<0.9	~~B~~	P	UJ	98M1589L	06/16/98	06/16/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

6/9/98

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: April 8, 1999

Matrix: Soil

Parameters: Tin

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-6314

Sample Identification

98SY-T08a-S-1
98SY-T08b-S-1
98SY-T08b-S-1MS
98SY-T08b-S-1MSD
98SY-T08b-S-1DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010 for Tin.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
11/19/98	CCV	Tin	110.4 (90-110)	All samples in SDG 98-6314	J (all detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Tin - Data Qualification Summary - SDG 98-6314

SDG	Sample	Analyte	Flag	A or P	Reason
98-6314	98SY-T08a-S-1 98SY-T08b-S-1	Tin	J (all detects)	P	Calibration (%R)

Long Beach Naval Shipyard
Tin - Laboratory Blank Data Qualification Summary - SDG 98-6314

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Tin - Field Blank Data Qualification Summary - SDG 98-6314

No Sample Data Qualified in this SDG

A

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard	Service ID:	986314	Collected by:	B. Boyd
		Lab Sample ID:	98-6314-1	Received Date:	06/11/98
Sample ID:	**98SY-T08A-S-1**	Sample Matrix	Soil	Moisture %:	3.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Tin, Sn	7440-31-5	mg/kg	2.1	24.3	J	P		98M2505L	11/19/98	11/19/98	1	6010

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/15/99

30906

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard	Service ID:	986314	Collected by:	B. Boyd
		Lab Sample ID:	98-6314-2	Received Date:	06/11/98
Sample ID:	**98SY-T08B-S-1**	Sample Matrix	Soil	Moisture %:	12.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Tin, Sn	7440-31-5	mg/kg	2.3	12.4	J	P		98M2505L	11/19/98	11/19/98	1	6010

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

12/15/99

30907

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6**

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
98G2741-MB-01	6/19/98	TPH as gasoline	0.05 mg/Kg	98SY-T10a-S-3 98SY-T10b-S-3

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-T10a-S-3	TPH as gasoline	0.02 mg/Kg	1.1U mg/Kg
98SY-T10b-S-3	TPH as gasoline	0.03 mg/Kg	1.1U mg/Kg

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3406	TPH as gasoline	No MS/MSD associated with these samples.	MS/MSD required.	None	P

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Flag	A or P	Reason
98-3406	98SY-T10a-S-3 98SY-T10a-W-12 98SY-T10b-S-3 98SY-T10b-W-12.6**	TPH as gasoline	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Modified Final Concentration	A or P
98-3406	98SY-T10a-S-3	TPH as gasoline	1.1U mg/Kg	A
98-3406	98SY-T10b-S-3	TPH as gasoline	1.1U mg/Kg	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-26	Received Date:	06/11/98
Sample ID:	**98SY-T10A-S-3**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2741	Prep. No:	-	Anal. Time:	11:48
Data File Name:	3406.026	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.02	~~U~~ 1.1 U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	99
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-27	Received Date:	06/11/98
Sample ID:	**98SY-T10A-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2744	Prep. No:	–	Anal. Time:	00:35
Data File Name:	3406.027	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.02	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	101
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

u 6/19/98

0018109

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/19/98	Anal. Date:	06/19/98
Batch No:	98G2741	Prep. No:	–	Anal. Time:	12:12
Data File Name:	3406.028	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.03	J 1.1U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	88
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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0018111

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-29	Received Date:	06/11/98
Sample ID:	**98SY-T10B-W-12.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2744	Prep. No:	-	Anal. Time:	00:12
Data File Name:	3406.029	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.02	J
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (BFB)	460-00-4		77-123	103	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

18113

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T10a-S-3
98SY-T10a-W-12
98SY-T10b-S-3
98SY-T10b-W-12.6**

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 98-3406	TPH as extractables	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M4WA-B-0MS/MSD (All soil samples in SDG 98-3406)	TPH as extractables	-	-	201 (≤43)	J	A

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 98-3406

SDG	Sample	Compound	Flag	A or P	Reason
98-3406	98SY-T10a-W-12 98SY-T10b-W-12.6**	TPH as extractables	None	P	Matrix spike/Matrix spike duplicates
98-3406	98SY-T10a-S-3 98SY-T10b-S-3	TPH as extractables	J	A	Matrix spike/Matrix spike duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-26	Received Date:	06/11/98
Sample ID:	**98SY-T10A-S-3**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	17:48
Data File Name:	3406.026	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	2	J
2	Motor Oil		mg/kg	11	2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	97
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-27	Received Date:	06/11/98
Sample ID:	**98SY-T10A-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/22/98	Anal. Date:	06/24/98
Batch No:	98G2788	Prep. No:	1 of 1	Anal. Time:	06:22
Data File Name:	3406.127	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	TPH: Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor Oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-28	Received Date:	06/11/98
Sample ID:	**98SY-T10B-S-3**	Sample Matrix	Soil	Moisture %:	9.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	18:38
Data File Name:	3406.028	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	20	J
2	Motor Oil		mg/kg	11	92	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	75
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/11/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983406	Collected by:	B Boyd
		Lab Sample ID:	98-3406-29	Received Date:	06/11/98
Sample ID:	**98SY-T10B-W-12.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/22/98	Anal. Date:	06/24/98
Batch No:	98G2788	Prep. No:	1 of 1	Anal. Time:	06:47
Data File Name:	3406.129	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	TPH: Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor Oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Cyanide

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T01a-S-5
98SY-T01a-W-7
98SY-T01b-S-5
98SY-T01b-W-9
98SY-T01c-S-5
98SY-T01c-W-10
98SY-T01d-S-5
98SY-T01d-W-12.4
98SY-T01e-S-5
98SY-T01e-W-10.7
98SY-T01m-S-5
98SY-T01m-W-10
98SY-T02a-S-5
98SY-T02a-W-11.3
98SY-T01e-S-5MS
98SY-T01e-S-5MSD
98SY-T01e-W-10.7MS
98SY-T01e-W-10.7MSD
98SY-T01e-W-10.7DUP

Introduction

This data review covers 9 soil samples and 10 water samples listed on the cover sheet. The analyses were per EPA Method 335.2 for Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

Raw data were not reviewed for this SDG.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01c-S-5 and 98SY-T01e-S-5 and samples 98SY-T01c-W-10 and 98SY-T01e-W-10.7 were identified as field duplicates. No cyanide was detected in any of the samples.

Long Beach Naval Shipyard
Cyanide - Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 335.2
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3406-2	98SY-T01A-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3601	mg/kg	2.6	<2.6	U
98-3406-4	98SY-T01A-W-7	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-5	98SY-T01B-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3601	mg/kg	2.7	<2.7	U
98-3406-7	98SY-T01B-W-9	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-8	98SY-T01C-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3601	mg/kg	2.6	<2.6	U
98-3406-10	98SY-T01C-W-10	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-11	98SY-T01D-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3601	mg/kg	2.6	<2.6	U
98-3406-13	98SY-T01D-W-12.4	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-14	98SY-T01E-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3625	mg/kg	2.6	<2.6	U
98-3406-16	98SY-T01E-W-10.7	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-17	98SY-T01M-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3625	mg/kg	2.6	<2.6	U
98-3406-19	98SY-T01M-W-10	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98-3406-20	98SY-T02A-S-5	Soil	06/11/98	06/11/98	06/19/98	98W3625	mg/kg	2.9	<2.9	U
98-3406-22	98SY-T02A-W-11.3	Water	06/11/98	06/11/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98W3601-MB-01		Soil	06/19/98	06/19/98	06/19/98	98W3601	mg/kg	2.5	<2.5	U
98W3507-MB-01		Water	06/16/98	06/16/98	06/16/98	98W3507	mg/L	0.05	<0.05	U
98W3625-MB-01		Soil	06/19/98	06/19/98	06/19/98	98W3625	mg/kg	2.5	<2.5	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Hexavalent Chromium

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T01a-S-5
98SY-T01a-W-7
98SY-T01b-S-5
98SY-T01b-W-9
98SY-T01c-S-5
98SY-T01c-W-10
98SY-T01d-S-5
98SY-T01d-W-12.4**
98SY-T01e-S-5
98SY-T01e-W-10.7
98SY-T01m-S-5
98SY-T01m-W-10
98SY-T02a-S-5
98SY-T02a-W-11.3**
98SY-T01e-S-5MS
98SY-T01e-S-5MSD
98SY-T01e-W-10.7MS
98SY-T01e-W-10.7MSD
98SY-T01e-W-10.7DUP
98SY-T01e-S-5DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 10 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01c-S-5 and 98SY-T01e-S-5 and samples 98SY-T01c-W-10 and 98SY-T01e-W-10.7 were identified as field duplicates. No hexavalent chromium was detected in any of the samples.

Long Beach Naval Shipyard
Hexavalent Chromium - Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 7196
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3406-2	98SY-T01A-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.053	<0.053	U
98-3406-4	98SY-T01A-W-7	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-5	98SY-T01B-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.053	<0.053	U
98-3406-7	98SY-T01B-W-9	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-8	98SY-T01C-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.052	<0.052	U
98-3406-10	98SY-T01C-W-10	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-11	98SY-T01D-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.052	<0.052	U
98-3406-13	98SY-T01D-W-12.4	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-14	98SY-T01E-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.052	<0.052	U
98-3406-16	98SY-T01E-W-10.7	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-17	98SY-T01M-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.052	<0.052	U
98-3406-19	98SY-T01M-W-10	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98-3406-20	98SY-T02A-S-5	Soil	06/11/98	06/11/98	06/16/98	98W3503	mg/kg	0.058	<0.058	U
98-3406-22	98SY-T02A-W-11.3	Water	06/11/98	06/11/98	06/12/98	98W3440	mg/L	0.01	<0.01	U
98W3503-MB-01		Soil	06/16/98	06/16/98	06/16/98	98W3503	mg/kg	0.05	<0.05	U
98W3440-MB-01		Water	06/12/98	06/12/98	06/12/98	98W3440	mg/L	0.01	<0.01	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 11, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3406

Sample Identification

98SY-T01a-S-5
98SY-T01a-W-7
98SY-T01b-S-5
98SY-T01b-W-9
98SY-T01c-S-5
98SY-T01c-W-10
98SY-T01d-S-5
98SY-T01d-W-12.4
98SY-T01e-S-5
98SY-T01e-W-10.7
98SY-T01m-S-5
98SY-T01m-W-10
98SY-T02a-S-5
98SY-T02a-W-11.3**
98SY-T07a-S-5
98SY-T10a-S-3
98SY-T10b-S-3

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 7 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 98-3406	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01c-S-5 and 98SY-T01e-S-5 and samples 98SY-T01c-W-10 and 98SY-T01e-W-10.7 were identified as field duplicates. The results are listed as follows:

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T01c-S-5	98SY-T01e-S-5			
pH	8.40	8.19	3 (≤35)	-	-

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T01c-W-10	98SY-T01e-W-10.7			
pH	7.22	7.26	0.6 (≤20)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 98-3406

SDG	Sample	Analyte	Flag	A or P	Reason
98-3406	98SY-T01a-S-5 98SY-T01a-W-7 98SY-T01b-S-5 98SY-T01b-W-9 98SY-T01c-S-5 98SY-T01c-W-10 98SY-T01d-S-5 98SY-T01d-W-12.4 98SY-T01e-S-5 98SY-T01e-W-10.7 98SY-T01m-S-5 98SY-T01m-W-10 98SY-T02a-S-5 98SY-T02a-W-11.3** 98SY-T07a-S-5 98SY-T10a-S-3 98SY-T10b-S-3	pH	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 98-3406

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983406 Collected by: B Boyd

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3406-2	98SY-T01A-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.05	
98-3406-4	98SY-T01A-W-7	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.17	
98-3406-5	98SY-T01B-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.23	
98-3406-7	98SY-T01B-W-9	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.27	
98-3406-8	98SY-T01C-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.40	
98-3406-10	98SY-T01C-W-10	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.22	
98-3406-11	98SY-T01D-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.09	
98-3406-13	98SY-T01D-W-12.4	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.18	
98-3406-14	98SY-T01E-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.19	
98-3406-16	98SY-T01E-W-10.7	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.26	
98-3406-17	98SY-T01M-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	7.99	
98-3406-19	98SY-T01M-W-10	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.27	
98-3406-20	98SY-T02A-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.06	
98-3406-22	98SY-T02A-W-11.3	Water	06/11/98	06/11/98	06/12/98	98W3441	pH unit	0.01	7.12	
98-3406-23	98SY-T07A-S-5	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	7.93	
98-3406-26	98SY-T10A-S-3	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	8.00	
98-3406-28	98SY-T10B-S-3	Soil	06/11/98	06/11/98	06/20/98	98W3640	pH unit	0.01	7.90	
98W3640-MB-01		Soil	06/20/98	06/20/98	06/20/98	98W3640	pH unit	0.01	6.57	
98W3441-MB-01		Water	06/12/98	06/12/98	06/12/98	98W3441	pH unit	0.01	6.55	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

~9698

Cooler 1 3-W-11-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
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Chain of Custody

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Client: CDM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 7683383 Fax #: 619 268 9677

Address: 3760 CONVOY ST STE 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA KANSAS Office

Project Name/Code Long Beach Naval Shipyard/AOC Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ Regular ☐ rush: ___ days ___ hours Sampled by: JEE Below

Analysis Items

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	CN	Cr+6	pH	METALS TTLC	Remarks
985Y-TØ1a	- W - 7	96-11-98	0800	WATER	NaOH	1	X				
985Y-TØ1a	- W - 7	06-11-98	0800	Water	HNO_3	1				X	
985Y-TØ1a	- W - 7	96-11-98	0800	Water	4°C	1		X	X		
985Y-TØ1b	- W - 9	96-11-98	0841	Water	NaOH	1	X				
985Y-TØ1b	- W - 9	06-11-98	0840	Water	HNO_3	1				X	
985Y-TØ1b	- W - 9	96-11-98	0840	Water	4°C	1		X	X		
985Y-TØ1c	- W - 10	06-11-98	0940	Water	NaOH		X				
985Y-TØ1c	- W - 10	96-11-98	0940	Water	HNO_3					X	
985Y-TØ1c	- W - 10	06-11-98	0940	Water	4°C			X	X		
985Y-TØ1m	- W - 10	06-11-98	0940	Water	NaOH		X				
985Y-TØ1m	- W - 10	06-11-98	0940	Water	HNO_3					X	
985Y-TØ1m	- W - 10	06-11-98	0940	Water	4°C			X	X		

BB, Jee Bow

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by [signature] Date/Time 6/11/98 /1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

BB

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Chain of Custody

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Client: CDM FEDERAL Contact: DAVE BOSTIAN Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: GENERA KANSAS office

Project Name/Code Long Beach Naval Shipyard AOC, Job #6219-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: See Below

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: CN	Cr+6	pH	Metals Title 1	Remarks
98SY-TØ1d-W-12.4		06-11-98	1040	Water	NaOH	1	X				
98SY-TØ1d-W-12.4		06-11-98	1040	Water	HNO_3	1				X	
98SY-TØ1d-W-12.4		06-11-98	1040	Water	4°C	1		X	X		
98SY-TØ1e-W-10.7		06-11-98	1200	Water	NaOH	3	X				MS/MSD
98SY-TØ1e-W-10.7		06-11-98	1200	Water	HNO_3	3				X	MS/MSD
98SY-TØ1e-W-10.7		06-11-98	1200	Water	4°C	3		X	X		MS/MSD
98SY-TØ2a-W-11.3		06-11-98	1335	Water	NaOH	1	X				
98SY-TØ2a-W-11.3		06-11-98	1335	Water	HNO_3	1				X	
98SY-TØ2a-W-11.3		06-11-98	1335	Water	4°C	1		X	X		
BBrown Frank Dow											

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [X] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Dow Date/Time 6/11/98 /1800 Received by Date/Time /

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APCL USE ONLY Service # Note:

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Cooler 2-06-11-98

Applied P & Ch Laboratory

APCL

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Chain of Custody

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Address: 3760 Convoy St Ste 210 City: San Diego State: Ca Zip code: 92111

Bill to: LENEXA KANSAS office

Project Name/Code Long Beach Naval Shipyard AOC Job # 6210-04 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] Regular [ ] rush: ___ days ___ hours Sampled by: Eric Bolon

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOC's 8260 B	Metals TTLC 17	pH	CN	Cr+6	Remarks
~~9854-BTJ-S-10~~												
9854-BTJ-W-10		06-11-98	0745	water	HCl	2	X					
9854-TP1a-S-5		06-11-98	0745	Soil	4°C	2	X	X	X	X	X	
9854-TP1a-W-7		06-11-98	0800	Water	HCl	2	X					
9854-TP1b-W-9		06-11-98	0840	Water	HCl	2	X					
~~9854-TP1b-S-5~~		~~06-11-98~~	~~0830~~	~~Soil~~	~~HC~~							
9854-TP1b-S-5		06-11-98	0830	Soil	4°C	2	X	X	X	X	X	
9854-TP1c-S-5		06-11-98	0930	Soil	4°C	2	X	X	X	X	X	
9854-TP1m-S-5		06-11-98	0930	Soil	4°C	2	X	X	X	X	X	
9854-TP1c-W-10		06-11-98	0940	Water	HCl	2	X					
9854-TP1m-W-10		06-11-98	0940	Water	HCl	2	X					
9854-TP1d-S-5		06-11-98	1030	Soil	4°C	2	X	X	X	X	X	
9854-TP1d-W-12.4		06-11-98	1040	Water	HCl	2	X					
EB-1												

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (____ °C).

Relinquished by		Date/Time 6/11/98 / 1800	Received by		Date/Time /
Relinquished by		Date/Time /	Received by		Date/Time /

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Cooler B-DE-11-98

Applied P & Ch Laboratory

APCL

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Chain of Custody

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Client: COM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9766

Address: 3760 Convoy St ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: CENEXA KANSAS Office

Project Name/Code Long Beach Naval Shipyard NOCs Job #6710-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: SEE Below

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260	Metals Mobility	Metals TTLC 17	pH	CN	Cr+6	SVOCs 8270	PCBs 8082	TPH-g 8015m	TPH-d 8015m			Remarks
985Y-T01e-S-5		06-11-98	1145	Soil	4°C	4	X		X	X	X	X							MS/MSD
985Y-T01e-W-10.7		06-11-98	1200	Water	HCl	4	X												MS/MSD
985Y-T02a-S-5		06-11-98	1330	Soil	4°C	2	X		X	X	X	X							
985Y-T02a-W-11.3		06-11-98	1335	Water	HCl	2	X												
985Y-T07a-S-5		06-11-98	1430	Soil	4°C	1	X		X										
985Y-T11a-S-1		06-11-98	1450	Soil	4°C	1			X										
985Y-T11a-W-15.3		06-11-98	~~1450~~ 1455	Water	HNO_3	1			X										
~~985Y-T10a-S-3~~		~~06-11-98~~	1500																
985Y-T10a-S-3		06-11-98	1530	Soil	4°C	2	X		X				X	X	X	X			
985Y-T10a-W-12		06-11-98	1545	Water	HCl	2	X												
985Y-T10a-W-12		06-11-98	1545	Water	HCl	2									X				
985Y-T10a-W-12		06-11-98	1545	Water	4°C	1							X						
985Y-T10a-W-12		06-11-98	1545	Water	HNO_3	1			X										
985Y-T10a-W-12		06-11-98	1545	Water	4°C	1								X					
	Blind Dup																		

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by [signature] Date/Time 6/11/98 / 1800 Received by _____ Date/Time _____ /

Relinquished by _____ Date/Time _____ / Received by _____ Date/Time _____ /

APCL USE ONLY Service # Note:

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Cooler Rec'd 6-11-98

Applied P & Ch Laboratory

APCL

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Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: COM FEDERAL Contact: DAVE BROSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: San Diego State: CA Zip code: 92111

Bill to: LENEXA KANSAS Office

Project Name/Code Long Beach Naval Shipyard Job #6218-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: SEE BELOW

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Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260b	SVOCs 8270c	Metals TTLC 17	PCBs 8082	TPH-gas 5	TPH-d 8015m	Remarks
985Y-T10a-W-12		06-11-98	1545	Water	4°C	1						X	
985Y-T10b-SS-3		06-11-98	1635	Soil	4°C	2	X	X	X	X	X	X	
985Y-T10b-W-12.6		06-11-98	1645	Water	HCl	2	X						
985Y-T10b-W-12.6		06-11-98	1645	Water	HCl	2					X		
985Y-T10b-W-12.6		06-11-98	1645	Water	4°C	1		X					
985Y-T10b-W-12.6		06-11-98	1645	Water	HNO_3	1			X				
985Y-T10b-W-12.6		06-11-98	1645	Water	4°C	1				X			
985Y-T10b-W-12.6		06-11-98	1645	Water	4°C	1						X	
985Y-T08a-S-1		06-11-98	1150	Soil	4°C	1			X				
985Y-T08b-S-1		06-11-98	1740	Soil	4°C	1			X				
ISBoyd Jason Rem													

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D) ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by Jason Rem Date/Time 6/11/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 1, 1998

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-BT1k-W-10
98SY-M1D-1a-L-5**
98SY-T01f-S-5
98SY-T01f-W-9**
98SY-T01g-S-5
98SY-T01g-W-12
98SY-T01k-W-5
98SY-T01k-W-5DL
98SY-T01m-W-5
98SY-T01m-W-5DL
98SY-T01n-S-5
98SY-T01n-W-12
98SY-T06c-S-5
98SY-T06c-W-12
98SY-T06d-S-5

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals with the following exceptions:

Sample	Compound	Total Time From BFB Tuning Until Analysis	Required Analysis Time (in Hours) From BFB Tuning Until Analysis	Flag	A or P
98SY-T06c-W-12	All TCL compounds	12 hours 4 minutes	12 hours	None	P

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 with the following exceptions:

Date	Compound	r^2	Associated Samples	Flag	A or P
6/25/98	Trichlorofluoromethane	0.945	All soil samples in SDG 98-3459	J	A

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/23/98	1,2,3-Trichlorobenzene Hexachlorobutadiene	28.2 37.8	98SY-BT1k-W-10 98SY-M1D-1a-L-5** 98SY-T01f-W-9** 98SY-T01g-W-12 98SY-T01k-W-5 98SY-T01m-W-5 98SY-T06c-W-12 98G2787MB01	J J	A
6/30/98	Methylene chloride Styrene 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane 1,3-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	26.6 25.9 28.3 28.5 25.4 29.7 43.8 37.3 40.8 45.1 36.9	98SY-T01k-W-5DL 98SY-T01m-W-5DL 98SY-T01n-W-12 98G2873MB02	J J J J J J J J J J J	A
6/27/98	Chloroethane Trichlorofluoromethane	41.0 31.8	All soil samples in SDG 98-3459	J J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 98SY-BT1k-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
98SY-BT1k-W-10	Methylene chloride	0.6

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-M1D-1a-L-5**	Methylene chloride	100 ug/L	130U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-T01g-W-12	Methylene chloride	0.4 ug/L	5U ug/L
98SY-T01k-W-5	Methylene chloride	120 ug/L	130U ug/L
98SY-T01k-W-5DL	Methylene chloride	1500 ug/L	2500U ug/L
98SY-T01m-W-5DL	Methylene chloride	1200 ug/L	2500U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
98SY-T01n-W-12	1,2-Dichloroethane-d4	123 (80-119)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3459	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3459	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	J	P

The samples and associated blanks are qualified as estimated (J) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-T01k-W-5 98SY-T01m-W-5	1,1,1-Trichloroethane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J	A

Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
98SY-T01k-W-5 98SY-T01m-W-5	1,1,1-Trichloroethane	R	A
98SY-T01k-W-5DL 98SY-T01m-W-5DL	All TCL compounds except 1,1,1-Trichloroethane	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-T01g-S-5 and 98SY-T01n-S-5, samples 98SY-T01g-W-12 and 98SY-T01n-W-12, samples 98SY-T01k-W-5 and 98SY-T01m-W-5, and samples 98SY-T01k-W-5DL and 98SY-T01m-W-5DL were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01g-W-12	98SY-T01n-W-12			
Methylene chloride	0.4	5U	200 (≤20)	J	A

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5	98SY-T01m-W-5			
Carbon tetrachloride	3450	130U	200 (≤20)	J	A
1,1-Dichloroethane	1700	1200	34 (≤20)	J	A
1,1-Dichloroethene	120	80	40 (≤20)	J	A
Methylene chloride	120	200	50 (≤20)	J	A
1,1,1-Trichloroethane	23800	13700	54 (≤20)	J	A

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5DL	98SY-T01m-W-5DL			
1,1-Dichloroethane	990	970	2 (≤20)	-	-
1,1-Dichloroethene	740	2500U	200 (≤20)	J	A

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5DL	98SY-T01m-W-5DL			
Methylene chloride	1500	1200	22 (≤20)	J	A
1,1,1-Trichloroethane	14000	13000	7 (≤20)	-	-

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 98-3459

SDG	Sample	Compound	Flag	A or P	Reason
98-3459	98SY-T06c-W-12	All TCL compounds	None	P	GC/MS instrument performance check
98-3459	98SY-T01f-S-5 98SY-T01g-S-5 98SY-T01n-S-5 98SY-T06c-S-5 98SY-T06d-S-5	Trichlorofluoromethane	J	A	Initial calibration (r^2)
98-3459	98SY-BT1k-W-10 98SY-M1D-1a-L-5** 98SY-T01f-W-9** 98SY-T01g-W-12 98SY-T01k-W-5 98SY-T01m-W-5 98SY-T06c-W-12	1,2,3-Trichlorobenzene Hexachlorobutadiene	J J	A	Continuing calibration (%D)
98-3459	98SY-T01k-W-5DL 98SY-T01m-W-5DL 98SY-T01n-W-12	Methylene chloride Styrene 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane 1,3-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J J J J J J J J J J J	A	Continuing calibration (%D)
98-3459	98SY-T01f-S-5 98SY-T01g-S-5 98SY-T01n-S-5 98SY-T06c-S-5 98SY-T06d-S-5	Chloroethane Trichlorofluoromethane	J J	A	Continuing calibration (%D)
98-3459	98SY-T01n-W-12	All TCL compounds	J (all detects)	P	Surrogate spikes (%R)
98-3459	98SY-BT1k-W-10 98SY-M1D-1a-L-5** 98SY-T01f-S-5 98SY-T01f-W-9** 98SY-T01g-S-5 98SY-T01g-W-12 98SY-T01k-W-5 98SY-T01k-W-5DL 98SY-T01m-W-5 98SY-T01m-W-5DL 98SY-T01n-S-5 98SY-T01n-W-12 98SY-T06c-S-5 98SY-T06c-W-12 98SY-T06d-S-5	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

SDG	Sample	Compound	Flag	A or P	Reason
98-3459	98SY-BT1k-W-10 98SY-M1D-1a-L-5** 98SY-T01f-S-5 98SY-T01f-W-9** 98SY-T01g-S-5 98SY-T01g-W-12 98SY-T01k-W-5 98SY-T01k-W-5DL 98SY-T01m-W-5 98SY-T01m-W-5DL 98SY-T01n-S-5 98SY-T01n-W-12 98SY-T06c-S-5 98SY-T06c-W-12 98SY-T06d-S-5	All TCL compounds	J	P	Laboratory control samples
98-3459	98SY-T01k-W-5 98SY-T01m-W-5	1,1,1-Trichloroethane	J	A	Compound quantitation and CRQLs
98-3459	98SY-T01k-W-5 98SY-T01m-W-5	1,1,1-Trichloroethane	R	A	Overall assessment of data
98-3459	98SY-T01k-W-5DL 98SY-T01m-W-5DL	All TCL compounds except 1,1,1-Trichloroethane	R	A	Overall assessment of data
98-3459	98SY-T01g-W-12 98SY-T01n-W-12	Methylene chloride	J	A	Field duplicates (RPD)
98-3459	98SY-T01k-W-5 98SY-T01m-W-5	Carbon tetrachloride 1,1-Dichloroethane 1,1-Dichloroethene Methylene chloride 1,1,1-Trichloroethane	J J J J	A	Field duplicates (RPD)
98-3459	98SY-T01k-W-5DL 98SY-T01m-W-5DL	1,1-Dichloroethene Methylene chloride	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 98-3459

SDG	Sample	Compound	Modified Final Concentration	A or P
98-3459	98SY-M1D-1a-L-5**	Methylene chloride	130U ug/L	A

SDG	Sample	Compound	Modified Final Concentration	A or P
98-3459	98SY-T01g-W-12	Methylene chloride	5U ug/L	A
98-3459	98SY-T01k-W-5	Methylene chloride	130U ug/L	A
98-3459	98SY-T01k-W-5DL	Methylene chloride	2500U ug/L	A
98-3459	98SY-T01m-W-5DL	Methylene chloride	2500U ug/L	A

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-1	Received Date:	06/16/98
Sample ID:	**98SY-BT1K-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	10:52
Data File Name:	3459-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U UJ
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	0.6	J
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	92
2	Dibromofluoromethane	1868-53-7	86-117	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	88-109	98
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2	Received Date:	06/16/98
Sample ID:	**98SY-M1D1A-L-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	17:33
Data File Name:	3459-02	Sample Amount:	1 mL	Dilution Factor:	25
Methanol Vol.	-				
		Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	130	<130	U UJ
2	Bromobenzene	108-86-1	µg/L	130	<130	U
3	Bromochloromethane	74-97-5	µg/L	130	<130	U
4	Bromodichloromethane	75-27-4	µg/L	130	<130	U
5	Bromoform	75-25-2	µg/L	130	<130	U
6	Bromomethane	74-83-9	µg/L	130	<130	U
7	n-Butylbenzene	104-51-8	µg/L	130	<130	U
8	sec-Butylbenzene	135-98-8	µg/L	130	<130	U
9	tert-Butylbenzene	98-06-6	µg/L	130	<130	U
10	Carbon tetrachloride	56-23-5	µg/L	130	37	J
11	Chlorobenzene	108-90-7	µg/L	130	<130	U UJ
12	Chlorodibromomethane	124-48-1	µg/L	130	<130	U
13	Chloroethane	75-00-3	µg/L	130	<130	U
14	Chloroform	67-66-3	µg/L	130	<130	U
15	Chloromethane	74-87-3	µg/L	130	<130	U
16	2-Chlorotoluene	95-49-8	µg/L	130	<130	U
17	4-Chlorotoluene	106-43-4	µg/L	130	<130	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	130	<130	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	130	<130	U
20	Dibromomethane	74-95-3	µg/L	130	<130	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	130	<130	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	130	<130	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	130	<130	U
24	Dichlorodifluoromethane	75-71-8	µg/L	130	<130	U
25	1,1-Dichloroethane	75-34-3	µg/L	130	940	J
26	1,2-Dichloroethane	107-06-2	µg/L	130	<130	U UJ
27	1,1-Dichloroethene	75-35-4	µg/L	130	<130	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	130	<130	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	130	<130	U
30	1,2-Dichloropropane	78-87-5	µg/L	130	<130	U
31	1,3-Dichloropropane	142-28-9	µg/L	130	<130	U
32	2,2-Dichloropropane	594-20-7	µg/L	130	<130	U
33	1,1-Dichloropropene	563-58-6	µg/L	130	<130	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	130	<130	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	130	<130	U
36	Ethylbenzene	100-41-4	µg/L	130	<130	U
37	Hexachlorobutadiene	87-68-3	µg/L	130	<130	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	130	<130	U
39	p-Isopropyltoluene	99-87-6	µg/L	130	<130	U

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n9498

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	130	100	130 UJ
41	Naphthalene	91-20-3	µg/L	130	< 130	U UJ
42	n-Propylbenzene	103-65-1	µg/L	130	< 130	U
43	Styrene	100-42-5	µg/L	130	< 130	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	130	< 130	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	130	< 130	U
46	Tetrachloroethene	127-18-4	µg/L	130	< 130	U
47	Toluene	108-88-3	µg/L	130	< 130	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	130	< 130	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	130	< 130	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	130	300	J
51	1,1,2-Trichloroethane	79-00-5	µg/L	130	< 130	U UJ
52	Trichloroethene	79-01-6	µg/L	130	< 130	U
53	Trichlorofluoromethane	75-69-4	µg/L	130	< 130	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	130	< 130	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	130	< 130	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	130	< 130	U
57	Vinyl chloride	75-01-4	µg/L	130	< 130	U
58	o-Xylene	95-47-6	µg/L	130	< 130	U
59	m/p-Xylene	108-38-3	µg/L	130	< 130	U
60	Xylenes (total)	1330-20-7	µg/L	130	< 130	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	107
2	Dibromofluoromethane	1868-53-7	86-117	96
3	1,2-Dichloroethane-d4	17060-07-0	80-119	103
4	Toluene-d8	2037-26-5	88-109	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

19137

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-4	Received Date:	06/16/98
Sample ID:	**98SY-T01F-S-5**	Sample Matrix	Soil	Moisture %:	2.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/27/98	Anal. Date:	06/27/98
Batch No:	98G2852	Prep. No:	-	Anal. Time:	07:45
Data File Name:	3459-04	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.1	< 5.1	U
2	Bromobenzene	108-86-1	µg/kg	5.1	< 5.1	U
3	Bromochloromethane	74-97-5	µg/kg	5.1	< 5.1	U
4	Bromodichloromethane	75-27-4	µg/kg	5.1	< 5.1	U
5	Bromoform	75-25-2	µg/kg	5.1	< 5.1	U
6	Bromomethane	74-83-9	µg/kg	5.1	< 5.1	U
7	n-Butylbenzene	104-51-8	µg/kg	5.1	< 5.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.1	< 5.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.1	< 5.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.1	< 5.1	U
11	Chlorobenzene	108-90-7	µg/kg	5.1	< 5.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.1	< 5.1	U
13	Chloroethane	75-00-3	µg/kg	5.1	< 5.1	U
14	Chloroform	67-66-3	µg/kg	5.1	< 5.1	U
15	Chloromethane	74-87-3	µg/kg	5.1	< 5.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.1	< 5.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.1	< 5.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.1	< 5.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.1	< 5.1	U
20	Dibromomethane	74-95-3	µg/kg	5.1	< 5.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.1	< 5.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.1	< 5.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.1	< 5.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.1	< 5.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.1	< 5.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.1	< 5.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.1	< 5.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.1	< 5.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.1	< 5.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.1	< 5.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.1	< 5.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.1	< 5.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.1	< 5.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.1	< 5.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.1	< 5.1	U
36	Ethylbenzene	100-41-4	µg/kg	5.1	< 5.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.1	< 5.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.1	< 5.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.1	< 5.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.1	< 5.1	U UJ
41	Naphthalene	91-20-3	µg/kg	5.1	< 5.1	U
42	n-Propylbenzene	103-65-1	µg/kg	5.1	< 5.1	U
43	Styrene	100-42-5	µg/kg	5.1	< 5.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.1	< 5.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.1	< 5.1	U
46	Tetrachloroethene	127-18-4	µg/kg	5.1	< 5.1	U
47	Toluene	108-88-3	µg/kg	5.1	< 5.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.1	< 5.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.1	< 5.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.1	< 5.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.1	< 5.1	U
52	Trichloroethene	79-01-6	µg/kg	5.1	< 5.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.1	< 5.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.1	< 5.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.1	< 5.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.1	< 5.1	U
57	Vinyl chloride	75-01-4	µg/kg	5.1	< 5.1	U
58	o-Xylene	95-47-6	µg/kg	5.1	< 5.1	U
59	m/p-Xylene	108-38-3	µg/kg	5.1	< 5.1	U
60	Xylenes (total)	1330-20-7	µg/kg	5.1	< 5.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	110
2	Dibromofluoromethane	1868-53-7	80-119	99
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	81-116	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	102
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
3	Fluorobenzene	462-06-6	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-5	Received Date:	06/16/98
Sample ID:	**98SY-T01F-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	13:22
Data File Name:	3459-05	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	1	J
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	96
2	Dibromofluoromethane	1868-53-7	86-117	94
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	88-109	100
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	104
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	113
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

U9498

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-6	Received Date:	06/16/98
Sample ID:	**98SY-T01G-S-5**	Sample Matrix	Soil	Moisture %:	4.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/27/98	Anal. Date:	06/27/98
Batch No:	98G2852	Prep. No:	-	Anal. Time:	08:19
Data File Name:	3459-06	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U UJ
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

N9498 C19152

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	119
2	Dibromofluoromethane	1868-53-7	80-119	107
3	1,2-Dichloroethane-d4	17060-07-0	80-119	116
4	Toluene-d8	2037-26-5	81-116	114
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-7	Received Date:	06/16/98
Sample ID:	**98SY-T01G-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	14:02
Data File Name:	3459-07	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	0.4	J5W
41	Naphthalene	91-20-3	µg/L	5	<5	U W
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	110
2	Dibromofluoromethane	1868-53-7	86-117	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	88-109	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
3	Fluorobenzene	462-06-6	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14498

019158

Revision # 1

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-8	Received Date:	06/16/98
Sample ID:	98SY-T01K-W-5	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	18:13
Data File Name:	3459-08	Sample Amount:	1 mL	Dilution Factor:	25
Methanol Vol.	-				
		Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	130	< 130	U
2	Bromobenzene	108-86-1	µg/L	130	< 130	U
3	Bromochloromethane	74-97-5	µg/L	130	< 130	U
4	Bromodichloromethane	75-27-4	µg/L	130	< 130	U
5	Bromoform	75-25-2	µg/L	130	< 130	U
6	Bromomethane	74-83-9	µg/L	130	< 130	U
7	n-Butylbenzene	104-51-8	µg/L	130	< 130	U
8	sec-Butylbenzene	135-98-8	µg/L	130	< 130	U
9	tert-Butylbenzene	98-06-6	µg/L	130	< 130	U
10	Carbon tetrachloride	56-23-5	µg/L	130	3450	
11	Chlorobenzene	108-90-7	µg/L	130	< 130	U
12	Chlorodibromomethane	124-48-1	µg/L	130	< 130	U
13	Chloroethane	75-00-3	µg/L	130	< 130	U
14	Chloroform	67-66-3	µg/L	130	< 130	U
15	Chloromethane	74-87-3	µg/L	130	< 130	U
16	2-Chlorotoluene	95-49-8	µg/L	130	< 130	U
17	4-Chlorotoluene	106-43-4	µg/L	130	< 130	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	130	< 130	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	130	< 130	U
20	Dibromomethane	74-95-3	µg/L	130	< 130	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	130	< 130	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	130	< 130	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	130	< 130	U
24	Dichlorodifluoromethane	75-71-8	µg/L	130	< 130	U
25	1,1-Dichloroethane	75-34-3	µg/L	130	1700	
26	1,2-Dichloroethane	107-06-2	µg/L	130	< 130	U
27	1,1-Dichloroethene	75-35-4	µg/L	130	120	J
28	cis-1,2-Dichloroethene	156-59-2	µg/L	130	< 130	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	130	< 130	U
30	1,2-Dichloropropane	78-87-5	µg/L	130	< 130	U
31	1,3-Dichloropropane	142-28-9	µg/L	130	< 130	U
32	2,2-Dichloropropane	594-20-7	µg/L	130	< 130	U
33	1,1-Dichloropropene	563-58-6	µg/L	130	< 130	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	130	< 130	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	130	< 130	U
36	Ethylbenzene	100-41-4	µg/L	130	< 130	U
37	Hexachlorobutadiene	87-68-3	µg/L	130	< 130	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	130	< 130	U
39	p-Isopropyltoluene	99-87-6	µg/L	130	< 130	U

19162

=	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	130	120	130 UJ
41	Naphthalene	91-20-3	µg/L	130	< 130	U W
42	n-Propylbenzene	103-65-1	µg/L	130	< 130	U
43	Styrene	100-42-5	µg/L	130	< 130	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	130	< 130	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	130	< 130	U
46	Tetrachloroethene	127-18-4	µg/L	130	< 130	U
47	Toluene	108-88-3	µg/L	130	< 130	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	130	< 130	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	130	< 130	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	130	23800	E R
51	1,1,2-Trichloroethane	79-00-5	µg/L	130	< 130	U UJ
52	Trichloroethene	79-01-6	µg/L	130	< 130	U
53	Trichlorofluoromethane	75-69-4	µg/L	130	< 130	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	130	< 130	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	130	< 130	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	130	< 130	U
57	Vinyl chloride	75-01-4	µg/L	130	< 130	U
58	o-Xylene	95-47-6	µg/L	130	< 130	U
59	m/p-Xylene	108-38-3	µg/L	130	< 130	U
60	Xylenes (total)	1330-20-7	µg/L	130	< 130	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	100
2	Dibromofluoromethane	1868-53-7	86-117	92
3	1,2-Dichloroethane-d4	17060-07-0	80-119	101
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	104
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	113
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

nq 9K

019163

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-8DL	Received Date:	06/16/98
Sample ID:	**98SY-T01K-W-5DL**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2873	Prep. No:	-	Anal. Time:	14:43
Data File Name:	3459-08A	Sample Amount:	0.05 mL	Dilution Factor:	500
Methanol Vol.	-				
		Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	2500	<2500	U R
2	Bromobenzene	108-86-1	µg/L	2500	<2500	U
3	Bromochloromethane	74-97-5	µg/L	2500	<2500	U
4	Bromodichloromethane	75-27-4	µg/L	2500	<2500	U
5	Bromoform	75-25-2	µg/L	2500	<2500	U
6	Bromomethane	74-83-9	µg/L	2500	<2500	U
7	n-Butylbenzene	104-51-8	µg/L	2500	<2500	U
8	sec-Butylbenzene	135-98-8	µg/L	2500	<2500	U
9	tert-Butylbenzene	98-06-6	µg/L	2500	<2500	U
10	Carbon tetrachloride	56-23-5	µg/L	2500	<2500	U
11	Chlorobenzene	108-90-7	µg/L	2500	<2500	U
12	Chlorodibromomethane	124-48-1	µg/L	2500	<2500	U
13	Chloroethane	75-00-3	µg/L	2500	<2500	U
14	Chloroform	67-66-3	µg/L	2500	<2500	U
15	Chloromethane	74-87-3	µg/L	2500	<2500	U
16	2-Chlorotoluene	95-49-8	µg/L	2500	<2500	U
17	4-Chlorotoluene	106-43-4	µg/L	2500	<2500	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	2500	<2500	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	2500	<2500	U
20	Dibromomethane	74-95-3	µg/L	2500	<2500	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	2500	<2500	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	2500	<2500	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	2500	<2500	U
24	Dichlorodifluoromethane	75-71-8	µg/L	2500	<2500	U
25	1,1-Dichloroethane	75-34-3	µg/L	2500	990	J D
26	1,2-Dichloroethane	107-06-2	µg/L	2500	<2500	U
27	1,1-Dichloroethene	75-35-4	µg/L	2500	740	J D
28	cis-1,2-Dichloroethene	156-59-2	µg/L	2500	<2500	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	2500	<2500	U
30	1,2-Dichloropropane	78-87-5	µg/L	2500	<2500	U
31	1,3-Dichloropropane	142-28-9	µg/L	2500	<2500	U
32	2,2-Dichloropropane	594-20-7	µg/L	2500	<2500	U
33	1,1-Dichloropropene	563-58-6	µg/L	2500	<2500	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	2500	<2500	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	2500	<2500	U
36	Ethylbenzene	100-41-4	µg/L	2500	<2500	U
37	Hexachlorobutadiene	87-68-3	µg/L	2500	<2500	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	2500	<2500	U
39	p-Isopropyltoluene	99-87-6	µg/L	2500	<2500	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	2500	1500	JD
41	Naphthalene	91-20-3	µg/L	2500	< 2500	U
42	n-Propylbenzene	103-65-1	µg/L	2500	< 2500	U
43	Styrene	100-42-5	µg/L	2500	< 2500	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	2500	< 2500	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	2500	< 2500	U
46	Tetrachloroethene	127-18-4	µg/L	2500	< 2500	U
47	Toluene	108-88-3	µg/L	2500	< 2500	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	2500	< 2500	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	2500	< 2500	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	2500	14000	D
51	1,1,2-Trichloroethane	79-00-5	µg/L	2500	< 2500	U
52	Trichloroethene	79-01-6	µg/L	2500	< 2500	U
53	Trichlorofluoromethane	75-69-4	µg/L	2500	< 2500	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	2500	< 2500	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	2500	< 2500	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	2500	< 2500	U
57	Vinyl chloride	75-01-4	µg/L	2500	< 2500	U
58	o-Xylene	95-47-6	µg/L	2500	< 2500	U
59	m/p-Xylene	108-38-3	µg/L	2500	< 2500	U
60	Xylenes (total)	1330-20-7	µg/L	2500	< 2500	U

R

RL

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	113
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	113
4	Toluene-d8	2037-26-5	88-109	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
3	Fluorobenzene	462-06-6	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

RQ98

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-9	Received Date:	06/16/98
Sample ID:	**98SY-T01M-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	18:54
Data File Name:	3459-09	Sample Amount:	1 mL	Dilution Factor:	25
Methanol Vol.	-				
		Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	130	<130	U
2	Bromobenzene	108-86-1	µg/L	130	<130	U
3	Bromochloromethane	74-97-5	µg/L	130	<130	U
4	Bromodichloromethane	75-27-4	µg/L	130	<130	U
5	Bromoform	75-25-2	µg/L	130	<130	U
6	Bromomethane	74-83-9	µg/L	130	<130	U
7	n-Butylbenzene	104-51-8	µg/L	130	<130	U
8	sec-Butylbenzene	135-98-8	µg/L	130	<130	U
9	tert-Butylbenzene	98-06-6	µg/L	130	<130	U
10	Carbon tetrachloride	56-23-5	µg/L	130	<130	U
11	Chlorobenzene	108-90-7	µg/L	130	<130	U
12	Chlorodibromomethane	124-48-1	µg/L	130	<130	U
13	Chloroethane	75-00-3	µg/L	130	<130	U
14	Chloroform	67-66-3	µg/L	130	<130	U
15	Chloromethane	74-87-3	µg/L	130	<130	U
16	2-Chlorotoluene	95-49-8	µg/L	130	<130	U
17	4-Chlorotoluene	106-43-4	µg/L	130	<130	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	130	<130	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	130	<130	U
20	Dibromomethane	74-95-3	µg/L	130	<130	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	130	<130	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	130	<130	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	130	<130	U
24	Dichlorodifluoromethane	75-71-8	µg/L	130	<130	U
25	1,1-Dichloroethane	75-34-3	µg/L	130	1200	
26	1,2-Dichloroethane	107-06-2	µg/L	130	<130	U
27	1,1-Dichloroethene	75-35-4	µg/L	130	80	J
28	cis-1,2-Dichloroethene	156-59-2	µg/L	130	<130	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	130	<130	U
30	1,2-Dichloropropane	78-87-5	µg/L	130	<130	U
31	1,3-Dichloropropane	142-28-9	µg/L	130	<130	U
32	2,2-Dichloropropane	594-20-7	µg/L	130	<130	U
33	1,1-Dichloropropene	563-58-6	µg/L	130	<130	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	130	<130	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	130	<130	U
36	Ethylbenzene	100-41-4	µg/L	130	<130	U
37	Hexachlorobutadiene	87-68-3	µg/L	130	<130	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	130	<130	U
39	p-Isopropyltoluene	99-87-6	µg/L	130	<130	U

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019176

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	130	200	J
41	Naphthalene	91-20-3	µg/L	130	< 130	U
42	n-Propylbenzene	103-65-1	µg/L	130	< 130	U
43	Styrene	100-42-5	µg/L	130	< 130	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	130	< 130	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	130	< 130	U
46	Tetrachloroethene	127-18-4	µg/L	130	< 130	U
47	Toluene	108-88-3	µg/L	130	< 130	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	130	< 130	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	130	< 130	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	130	13700	E
51	1,1,2-Trichloroethane	79-00-5	µg/L	130	< 130	U
52	Trichloroethene	79-01-6	µg/L	130	< 130	U
53	Trichlorofluoromethane	75-69-4	µg/L	130	< 130	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	130	< 130	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	130	< 130	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	130	< 130	U
57	Vinyl chloride	75-01-4	µg/L	130	< 130	U
58	o-Xylene	95-47-6	µg/L	130	< 130	U
59	m/p-Xylene	108-38-3	µg/L	130	< 130	U
60	Xylenes (total)	1330-20-7	µg/L	130	< 130	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	96
2	Dibromofluoromethane	1868-53-7	86-117	89
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	88-109	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

19177

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-9DL	Received Date:	06/16/98
Sample ID:	**98SY-T01M-W-5DL**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2873	Prep. No:	-	Anal. Time:	15:22
Data File Name:	3459-09A	Sample Amount:	0.05 mL	Dilution Factor:	500
Methanol Vol.	-				
		Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	2500	<2500	U
2	Bromobenzene	108-86-1	µg/L	2500	<2500	U
3	Bromochloromethane	74-97-5	µg/L	2500	<2500	U
4	Bromodichloromethane	75-27-4	µg/L	2500	<2500	U
5	Bromoform	75-25-2	µg/L	2500	<2500	U
6	Bromomethane	74-83-9	µg/L	2500	<2500	U
7	n-Butylbenzene	104-51-8	µg/L	2500	<2500	U
8	sec-Butylbenzene	135-98-8	µg/L	2500	<2500	U
9	tert-Butylbenzene	98-06-6	µg/L	2500	<2500	U
10	Carbon tetrachloride	56-23-5	µg/L	2500	<2500	U
11	Chlorobenzene	108-90-7	µg/L	2500	<2500	U
12	Chlorodibromomethane	124-48-1	µg/L	2500	<2500	U
13	Chloroethane	75-00-3	µg/L	2500	<2500	U
14	Chloroform	67-66-3	µg/L	2500	<2500	U
15	Chloromethane	74-87-3	µg/L	2500	<2500	U
16	2-Chlorotoluene	95-49-8	µg/L	2500	<2500	U
17	4-Chlorotoluene	106-43-4	µg/L	2500	<2500	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	2500	<2500	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	2500	<2500	U
20	Dibromomethane	74-95-3	µg/L	2500	<2500	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	2500	<2500	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	2500	<2500	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	2500	<2500	U
24	Dichlorodifluoromethane	75-71-8	µg/L	2500	<2500	U
25	1,1-Dichloroethane	75-34-3	µg/L	2500	970	JD
26	1,2-Dichloroethane	107-06-2	µg/L	2500	<2500	U
27	1,1-Dichloroethene	75-35-4	µg/L	2500	<2500	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	2500	<2500	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	2500	<2500	U
30	1,2-Dichloropropane	78-87-5	µg/L	2500	<2500	U
31	1,3-Dichloropropane	142-28-9	µg/L	2500	<2500	U
32	2,2-Dichloropropane	594-20-7	µg/L	2500	<2500	U
33	1,1-Dichloropropene	563-58-6	µg/L	2500	<2500	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	2500	<2500	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	2500	<2500	U
36	Ethylbenzene	100-41-4	µg/L	2500	<2500	U
37	Hexachlorobutadiene	87-68-3	µg/L	2500	<2500	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	2500	<2500	U
39	p-Isopropyltoluene	99-87-6	µg/L	2500	<2500	U

19182

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	2500	1200	JD
41	Naphthalene	91-20-3	µg/L	2500	< 2500	U
42	n-Propylbenzene	103-65-1	µg/L	2500	< 2500	U
43	Styrene	100-42-5	µg/L	2500	< 2500	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	2500	< 2500	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	2500	< 2500	U
46	Tetrachloroethene	127-18-4	µg/L	2500	< 2500	U
47	Toluene	108-88-3	µg/L	2500	< 2500	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	2500	< 2500	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	2500	< 2500	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	2500	13000	D
51	1,1,2-Trichloroethane	79-00-5	µg/L	2500	< 2500	U
52	Trichloroethene	79-01-6	µg/L	2500	< 2500	U
53	Trichlorofluoromethane	75-69-4	µg/L	2500	< 2500	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	2500	< 2500	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	2500	< 2500	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	2500	< 2500	U
57	Vinyl chloride	75-01-4	µg/L	2500	< 2500	U
58	o-Xylene	95-47-6	µg/L	2500	< 2500	U
59	m/p-Xylene	108-38-3	µg/L	2500	< 2500	U
60	Xylenes (total)	1330-20-7	µg/L	2500	< 2500	U

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Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	109
2	Dibromofluoromethane	1868-53-7	86-117	95
3	1,2-Dichloroethane-d4	17060-07-0	80-119	107
4	Toluene-d8	2037-26-5	88-109	101
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

WQ498

019183

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-10	Received Date:	06/16/98
Sample ID:	**98SY-T01N-S-5**	Sample Matrix	Soil	Moisture %:	5.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/27/98	Anal. Date:	06/27/98
Batch No:	98G2852	Prep. No:	-	Anal. Time:	08:53
Data File Name:	3459-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	116
2	Dibromofluoromethane	1868-53-7	80-119	110
3	1,2-Dichloroethane-d4	17060-07-0	80-119	116
4	Toluene-d8	2037-26-5	81-116	112
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

wq498

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-11	Received Date:	06/16/98
Sample ID:	**98SY-T01N-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2873	Prep. No:	-	Anal. Time:	16:40
Data File Name:	3459-11B	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	μg/L	5	<5	U
41	Naphthalene	91-20-3	μg/L	5	<5	U
42	n-Propylbenzene	103-65-1	μg/L	5	<5	U
43	Styrene	100-42-5	μg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	μg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	μg/L	5	<5	U
46	Tetrachloroethene	127-18-4	μg/L	5	<5	U
47	Toluene	108-88-3	μg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	μg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	μg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	μg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	μg/L	5	<5	U
52	Trichloroethene	79-01-6	μg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	μg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	μg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	μg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	μg/L	5	<5	U
57	Vinyl chloride	75-01-4	μg/L	5	<5	U
58	o-Xylene	95-47-6	μg/L	5	<5	U
59	m/p-Xylene	108-38-3	μg/L	5	<5	U
60	Xylenes (total)	1330-20-7	μg/L	5	<5	U

UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	105
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	111
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	105
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	118
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

N9494

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-12	Received Date:	06/16/98
Sample ID:	**98SY-T06C-S-5**	Sample Matrix	Soil	Moisture %:	7.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/27/98	Anal. Date:	06/27/98
Batch No:	98G2852	Prep. No:	-	Anal. Time:	09:26
Data File Name:	3459-12	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U UJ
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	119
2	Dibromofluoromethane	1868-53-7	80-119	107
3	1,2-Dichloroethane-d4	17060-07-0	80-119	116
4	Toluene-d8	2037-26-5	81-116	115
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	93
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
3	Fluorobenzene	462-06-6	50-200	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-13	Received Date:	06/16/98
Sample ID:	**98SY-T06C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	20:56
Data File Name:	3459-13A	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	0.4	J
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	103
2	Dibromofluoromethane	1868-53-7	86-117	105
3	1,2-Dichloroethane-d4	17060-07-0	80-119	123
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	105
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	115
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-14	Received Date:	06/16/98
Sample ID:	**98SY-T06D-S-5**	Sample Matrix	Soil	Moisture %:	6.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/27/98	Anal. Date:	06/27/98
Batch No:	98G2852	Prep. No:	-	Anal. Time:	10:00
Data File Name:	3459-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
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16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
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37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	114
2	Dibromofluoromethane	1868-53-7	80-119	117
3	1,2-Dichloroethane-d4	17060-07-0	80-119	105
4	Toluene-d8	2037-26-5	81-116	116
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
3	Fluorobenzene	462-06-6	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: October 14, 1998

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-M1D-1a-L-5RE
98SY-T01f-S-5
98SY-T01f-W-9**
98SY-T01k-W-5
98SY-T01k-W-5RE
98SY-T01m-W-5
98SY-T01m-W-5RE

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers one soil sample and 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
98SY-M1D-1a-L-5RE	2-Fluorobiphenyl Nitrobenzene-d5	32 (43-115) 31 (35-113)	All base neutral compounds	J	*A

R per Sec IV

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 98-3459	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria for samples on which

a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
98SY-M1D-1a-L-5RE 98SY-T01k-W-5RE 98SY-T01m-W-5RE	All TCL compounds	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-T01k-W-5 and 98SY-T01m-W-5 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5	98SY-T01m-W-5			
Bis(2-ethylhexyl)phthalate	11	10U	200 (≤20)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 98-3459

SDG	Sample	Compound	Flag	A or P	Reason
98-3459	98SY-M1D-1a-L-5RE	Bis(2-chloroethyl) ether	J	*A	Surrogate spikes (%R)
		1,3-Dichlorobenzene	J		
		1,4-Dichlorobenzene	J		
		1,2-Dichlorobenzene	J		
		2,2'-Oxybis(1-chloropropane)	J		
		N-Nitroso-di-n-propylamine	J		
		Hexachloroethane	J		
		Nitrobenzene	J		
		Isophorone	J		
		Bis(2-chloroethoxy)methane	J		
		1,2,4-Trichlorobenzene	J		
		Naphthalene	J		
		4-Chloroaniline	J		
		Hexachlorobutadiene	J		
		2-Methylnaphthalene	J		
		Hexachlorocyclopentadiene	J		
		2-Chloronaphthalene	J		
		2-Nitroaniline	J		
		Dimethylphthalate	J		
		Acenaphthylene	J		
		2,6-Dinitrotoluene	J		
		3-Nitroaniline	J		
		Acenaphthene	J		
		Dibenzofuran	J		
		2,4-Dinitrotoluene	J		
		Diethylphthalate	J		
		4-Chlorophenylphenyl ether	J		
		Fluorene	J		
		4-Nitroaniline	J		
		N-Nitrosodiphenylamine	J		
		4-Bromophenylphenyl ether	J		
		Hexachlorobenzene	J		
		Phenanthrene	J		
		Anthracene	J		
		Carbazole	J		
		Di-n-butylphthalate	J		
		Fluoranthene	J		
		Pyrene	J		
		Butylbenzylphthalate	J		
		3,3'-Dichlorobenzidine	J		
		Benzo(a)anthracene	J		
		Chrysene	J		
		Bis(2-ethylhexyl)phthalate	J		
		Di-n-octylphthalate	J		
		Benzo(b)fluoranthene	J		
		Benzo(k)fluoranthene	J		
		Benzo(a)pyrene	J		
		Indeno(1,2,3-cd)pyrene	J		
		Dibenz(a,h)anthracene	J		
		Benzo(g,h,i)perylene	J		

SDG	Sample	Compound	Flag	A or P	Reason
98-3459	98SY-M1D-1a-L-5 98SY-M1D-1a-L-5RE 98SY-T01f-W-9** 98SY-T01k-W-5 98SY-T01k-W-5RE 98SY-T01m-W-5 98SY-T01m-W-5RE	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
98-3459	98SY-M1D-1a-L-5RE 98SY-T01k-W-5RE 98SY-T01m-W-5RE	All TCL compounds	R	A	Overall assessment of data
98-3459	98SY-T01k-W-5 98SY-T01m-W-5	Bis(2-ethylhexyl)phthalate	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2	Received Date:	06/16/98
Sample ID:	98SY-M1D1A-L-5	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	15:13
Data File Name:	3459-02	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	42
2	2-Fluorophenol	367-12-4	21- 99	50
3	Nitrobenzene-d5	4165-60-0	35-113	41
4	Phenol-d5	4165-62-2	10- 93	49
5	Terphenyl-d14	1718-51-0	33-140	60
6	2,4,6-Tribromophenol	118-79-6	10-122	47
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	89
2	Chrysene-d12	1719-03-5	50-200	81
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	83
4	Naphthalene-d8	1146-65-2	50-200	90
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2RE	Received Date:	06/16/98
Sample ID:	**98SY-M1D1A-L-5RE**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	23:19
Data File Name:	3459-02B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U R
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U R
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	32
2	2-Fluorophenol	367-12-4	21- 99	37
3	Nitrobenzene-d5	4165-60-0	35-113	31
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	47
6	2,4,6-Tribromophenol	118-79-6	10-122	39
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	106
2	Chrysene-d12	1719-03-5	50-200	99
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	98
4	Naphthalene-d8	1146-65-2	50-200	103
5	Perylene-d12	1520-96-3	50-200	97
6	Phenanthrene-d10	1517-22-2	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-4	Received Date:	06/16/98
Sample ID:	98SY-T01F-S-5	Sample Matrix	Soil	Moisture %:	2.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	02:42
Data File Name:	3459-04	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	510	< 510	U
2	Acenaphthylene	208-96-8	µg/kg	510	< 510	U
3	Anthracene	120-12-7	µg/kg	510	< 510	U
4	Benz(a)anthracene	56-55-3	µg/kg	510	< 510	U
5	Benzo(a)pyrene	50-32-8	µg/kg	510	< 510	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	510	< 510	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	510	< 510	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	510	< 510	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	510	< 510	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	510	< 510	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	510	< 510	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	510	< 510	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	510	< 510	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	510	< 510	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	510	< 510	U
18	2-Chlorophenol	95-57-8	µg/kg	510	< 510	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	510	< 510	U
20	Chrysene	218-01-9	µg/kg	510	< 510	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	510	< 510	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	510	< 510	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	510	< 510	U
24	Dibenzofuran	132-64-9	µg/kg	510	< 510	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	510	< 510	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	510	< 510	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	510	< 510	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	510	< 510	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	510	< 510	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	510	< 510	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	510	< 510	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	510	< 510	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	510	< 510	U
37	Fluoranthene	206-44-0	µg/kg	510	< 510	U
38	Fluorene	86-73-7	µg/kg	510	< 510	U
39	Hexachlorobenzene	118-74-1	µg/kg	510	< 510	U
40	Hexachlorobutadiene	87-68-3	µg/kg	510	< 510	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	510	< 510	U
42	Hexachloroethane	67-72-1	µg/kg	510	< 510	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	510	< 510	U
44	Isophorone	78-59-1	µg/kg	510	< 510	U
45	2-Methylnaphthalene	91-57-6	µg/kg	510	< 510	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	510	< 510	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	510	< 510	U
48	Naphthalene	91-20-3	µg/kg	510	< 510	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	510	< 510	U
53	2-Nitrophenol	88-75-5	µg/kg	510	< 510	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	510	< 510	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	510	< 510	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	510	< 510	U
59	Phenol	108-95-2	µg/kg	510	< 510	U
60	Pyrene	129-00-0	µg/kg	510	< 510	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	510	< 510	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	510	< 510	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	510	< 510	U
64	Carbazole	86-74-8	µg/kg	510	< 510	U

	Surrogates		Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	60
2	2-Fluorophenol	367-12-4	25-120	57
3	Nitrobenzene-d5	4165-60-0	23-119	61
4	Phenol-d5	4165-62-2	25-112	59
5	Terphenyl-d14	1718-51-0	19-136	68
6	2,4,6-Tribromophenol	118-79-6	19-121	46
# of out-of-control				0

	Internal Standard		Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	89
2	Chrysene-d12	1719-03-5	50-200	97
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	83
4	Naphthalene-d8	1146-65-2	50-200	89
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-5	Received Date:	06/16/98
Sample ID:	98SY-T01F-W-9	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	20:11
Data File Name:	3459-05B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	52
2	2-Fluorophenol	367-12-4	21- 99	58
3	Nitrobenzene-d5	4165-60-0	35-113	52
4	Phenol-d5	4165-62-2	10- 93	57
5	Terphenyl-d14	1718-51-0	33-140	78
6	2,4,6-Tribromophenol	118-79-6	10-122	46
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	78
2	Chrysene-d12	1719-03-5	50-200	72
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
4	Naphthalene-d8	1146-65-2	50-200	76
5	Perylene-d12	1520-96-3	50-200	71
6	Phenanthrene-d10	1517-22-2	50-200	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-8	Received Date:	06/16/98
Sample ID:	**98SY-T01K-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	16:28
Data File Name:	3459-08	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	11	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	47
2	2-Fluorophenol	367-12-4	21- 99	31
3	Nitrobenzene-d5	4165-60-0	35-113	51
4	Phenol-d5	4165-62-2	10- 93	55
5	Terphenyl-d14	1718-51-0	33-140	60
6	2,4,6-Tribromophenol	118-79-6	10-122	50
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	107
2	Chrysene-d12	1719-03-5	50-200	98
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	98
4	Naphthalene-d8	1146-65-2	50-200	107
5	Perylene-d12	1520-96-3	50-200	100
6	Phenanthrene-d10	1517-22-2	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-8RE	Received Date:	06/16/98
Sample ID:	**98SY-T01K-W-5RE**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	23:57
Data File Name:	3459-08B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U R
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	9	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U R
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	42
2	2-Fluorophenol	367-12-4	21- 99	48
3	Nitrobenzene-d5	4165-60-0	35-113	43
4	Phenol-d5	4165-62-2	10- 93	45
5	Terphenyl-d14	1718-51-0	33-140	51
6	2,4,6-Tribromophenol	118-79-6	10-122	44
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	109
2	Chrysene-d12	1719-03-5	50-200	100
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	105
4	Naphthalene-d8	1146-65-2	50-200	107
5	Perylene-d12	1520-96-3	50-200	95
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-9	Received Date:	06/16/98
Sample ID:	98SY-T01M-W-5	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/26/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	17:05
Data File Name:	3459-09	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U UJ
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U 19516

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	33
2	2-Fluorophenol	367-12-4	21- 99	23
3	Nitrobenzene-d5	4165-60-0	35-113	37
4	Phenol-d5	4165-62-2	10- 93	38
5	Terphenyl-d14	1718-51-0	33-140	43
6	2,4,6-Tribromophenol	118-79-6	10-122	34
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	119
2	Chrysene-d12	1719-03-5	50-200	110
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	112
6	Phenanthrene-d10	1517-22-2	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-9RE	Received Date:	06/16/98
Sample ID:	**98SY-T01M-W-5RE**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	22:42
Data File Name:	3459-09B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U R
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	4	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	39
2	2-Fluorophenol	367-12-4	21- 99	45
3	Nitrobenzene-d5	4165-60-0	35-113	41
4	Phenol-d5	4165-62-2	10- 93	42
5	Terphenyl-d14	1718-51-0	33-140	48
6	2,4,6-Tribromophenol	118-79-6	10-122	41
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	100
2	Chrysene-d12	1719-03-5	50-200	95
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	96
5	Perylene-d12	1520-96-3	50-200	96
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: October 14, 1998

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5**
98SY-T01f-S-5
98SY-T01f-W-9
98SY-T01g-S-5
98SY-T01g-W-12**
98SY-T01k-W-5
98SY-T01m-W-5
98SY-T01n-S-5
98SY-T01n-W-12
98SY-T06c-S-5
98SY-T06c-W-12
98SY-T06d-S-5
98SY-T01f-W-9MS
98SY-T01f-W-9DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Barium Beryllium Cobalt Copper Thallium Molybdenum	0.9 ug/L 0.2 ug/L 0.5 ug/L 2.9 ug/L 1.9 ug/L 1.3 ug/L	All samples in SDG 98-3459
CCB1	Barium Beryllium Cobalt Copper Thallium Zinc Molybdenum	1.1 ug/L 0.2 ug/L 0.5 ug/L 35.9 ug/L 2.1 ug/L 0.9 ug/L 1.2 ug/L	All samples in SDG 98-3459
CCB2	Antimony Barium Beryllium Cobalt Thallium Zinc Molybdenum	2.5 ug/L 2.5 ug/L 0.3 ug/L 0.6 ug/L 2.1 ug/L 1.0 ug/L 1.7 ug/L	All samples in SDG 98-3459
CCB3	Antimony Barium Copper Zinc Molybdenum	2.4 ug/L 1.1 ug/L -0.8 ug/L 7.1 ug/L 0.8 ug/L	All samples in SDG 98-3459

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Beryllium Cadmium Cobalt Copper Selenium	0.005 mg/Kg 0.006 mg/Kg 0.021 mg/Kg 0.052 mg/Kg -0.097 mg/Kg	All soil samples in SDG 98-3459
ICB	Antimony Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Vanadium Zinc Molybdenum	2.7 ug/L 4.9 ug/L 0.7 ug/L 0.8 ug/L 1.9 ug/L 2.0 ug/L 3.4 ug/L 1.9 ug/L 0.7 ug/L 1.4 ug/L 2.4 ug/L 3.4 ug/L	All samples in SDG 98-3459
CCB1	Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Silver Thallium Vanadium Zinc Molybdenum	5.3 ug/L 0.6 ug/L 0.8 ug/L 2.5 ug/L 1.9 ug/L 3.6 ug/L 1.0 ug/L 1.9 ug/L 1.0 ug/L 3.0 ug/L 1.6 ug/L 2.0 ug/L 4.0 ug/L	All samples in SDG 98-3459
CCB2	Barium Beryllium Cadmium Cobalt Copper Nickel Thallium Molybdenum	1.6 ug/L 0.2 ug/L 0.3 ug/L 0.6 ug/L 2.1 ug/L 0.7 ug/L 1.5 ug/L 2.0 ug/L	All samples in SDG 98-3459
CCB3	Barium Beryllium Cadmium Cobalt Copper Nickel Molybdenum	1.7 ug/L 0.3 ug/L 0.3 ug/L 0.6 ug/L 1.5 ug/L 0.6 ug/L 1.1 ug/L	All samples in SDG 98-3459
PB (prep blank)	Copper	1.286 ug/L	All water samples in SDG 98-3459

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X

blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-M1D-1a-L-5**	Antimony Barium Cadmium Cobalt Copper Silver Zinc	7.1 ug/L 2.0 ug/L 0.59 ug/L 5.0 ug/L 62.5 ug/L 0.45 ug/L 23.1 ug/L	7.1U ug/L 2.0U ug/L 0.59U ug/L 5.0U ug/L 62.5U ug/L 0.45U ug/L 23.1U ug/L
98SY-T01f-S-5	Cadmium Copper Molybdenum	0.017 mg/Kg 4.9 mg/Kg 0.059 mg/Kg	0.017U mg/Kg 4.9U mg/Kg 0.059U mg/Kg
98SY-T01f-W-9	Chromium Cobalt Copper Lead Silver Thallium Zinc Molybdenum	2.4 ug/L 3.7 ug/L 12.3 ug/L 0.89 ug/L 0.32 ug/L 2.4 ug/L 11.5 ug/L 8.1 ug/L	2.4U ug/L 3.7U ug/L 12.3U ug/L 0.89U ug/L 0.32U ug/L 2.4U ug/L 11.5U ug/L 8.1U ug/L
98SY-T01g-S-5	Cadmium Copper Molybdenum	0.0099 mg/Kg 5.3 mg/Kg 0.053 mg/Kg	0.0099U mg/Kg 5.3U mg/Kg 0.053U mg/Kg
98SY-T01g-W-12**	Antimony Cadmium Chromium Cobalt Copper Thallium Zinc Molybdenum	3.1 ug/L 0.46 ug/L 2.9 ug/L 1.8 ug/L 21.1 ug/L 2.7 ug/L 10.5 ug/L 12.0 ug/L	3.1U ug/L 0.46U ug/L 2.9U ug/L 1.8U ug/L 21.1U ug/L 2.7U ug/L 10.5U ug/L 12.0U ug/L
98SY-T01k-W-5	Vanadium	1.6 ug/L	1.6U ug/L
98SY-T01m-W-5	Lead Vanadium	2.5 ug/L 1.4 ug/L	2.5U ug/L 1.4U ug/L
98SY-T01n-S-5	Cadmium Copper	0.0061 mg/Kg 4.9 mg/Kg	0.0061U mg/Kg 4.9U mg/Kg
98SY-T01n-W-12	Chromium Cobalt Copper Lead Thallium Zinc Molybdenum	4.0 ug/L 1.4 ug/L 10.9 ug/L 0.92 ug/L 1.8 ug/L 10.8 ug/L 11.7 ug/L	4.0U ug/L 1.4U ug/L 10.9U ug/L 0.92U ug/L 1.8U ug/L 10.8U ug/L 11.7U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-T06c-S-5	Cadmium Silver Molybdenum	0.079 mg/Kg 0.12 mg/Kg 0.39 mg/Kg	0.079U mg/Kg 0.12U mg/Kg 0.39U mg/Kg
98SY-T06c-W-12	Chromium Cobalt Copper Nickel Thallium Vanadium Zinc Molybdenum	3.7 ug/L 1.6 ug/L 16.6 ug/L 4.5 ug/L 1.6 ug/L 0.98 ug/L 9.4 ug/L 11.5 ug/L	3.7U ug/L 1.6U ug/L 16.6U ug/L 4.5U ug/L 1.6U ug/L 0.98U ug/L 9.4U ug/L 11.5U ug/L
98SY-T06d-S-5	Cadmium Molybdenum	0.052 mg/Kg 0.19 mg/Kg	0.052U mg/Kg 0.19U mg/Kg

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 98-3459	All TAL metals except Mercury	No MS associated with these samples.	MS required.	None	P

Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 98-3459	All TAL metals except Mercury	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
98SY-M4WA-B-OL	Silver Zinc	12.4 (≤10) 16.9 (≤10)	All soil samples in SDG 98-3459	J (all detects) J (all detects)	A

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 98SY-T01k-W-5 and 98SY-T01m-W-5, samples 98SY-T01g-W-12** and 98SY-T01n-W-12, and samples 98SY-T01g-S-5 and 98SY-T01n-S-5 were identified as

field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-T01g-S-5	98SY-T01n-S-5			
Arsenic	2.1	2.3	9 (≤35)	-	-
Barium	20.3	35.2	54 (≤35)	J	A
Cadmium	0.0099	0.0061	48 (≤35)	J	A
Chromium	12.9	9.5	30 (≤35)	-	-
Cobalt	3.2	3.4	6 (≤35)	-	-
Copper	5.3	4.9	8 (≤35)	-	-
Lead	4.1	4.5	9 (≤35)	-	-
Mercury	0.16	0.10	46 (≤35)	J	A
Nickel	7.5	6.0	22 (≤35)	-	-
Selenium	0.078U	0.12	200 (≤35)	J	A
Vanadium	16.8	17.4	4 (≤35)	-	-
Zinc	22.3	23.6	6 (≤35)	-	-
Molybdenum	0.053	0.03U	200 (≤35)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01g-W-12**	98SY-T01n-W-12			
Antimony	3.1	2.1U	200 (≤20)	J	A
Arsenic	3.8	3.8	0 (≤20)	-	-
Barium	54.3	58.3	7 (≤20)	-	-
Cadmium	0.46	0.19U	200 (≤20)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01g-W-12**	98SY-T01n-W-12			
Chromium	2.9	4.0	32 (≤20)	J	A
Cobalt	1.8	1.4	25 (≤20)	J	A
Copper	21.1	10.9	64 (≤20)	J	A
Lead	0.89U	0.92	200 (≤20)	J	A
Nickel	38.7	12.8	101 (≤20)	J	A
Thallium	2.7	1.8	40 (≤20)	J	A
Zinc	10.5	10.8	3 (≤20)	-	-
Molybdenum	12.0	11.7	3 (≤20)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5	98SY-T01m-W-5			
Antimony	558	553	0.9 (≤20)	-	-
Arsenic	18.4	20.6	11 (≤20)	-	-
Barium	55.9	56.9	2 (≤20)	-	-
Cadmium	129	130	0.8 (≤20)	-	-
Chromium	48.4	47.2	3 (≤20)	-	-
Cobalt	29.5	25.4	15 (≤20)	-	-
Copper	3100	3080	0.6 (≤20)	-	-
Lead	1.8U	2.5	200 (≤20)	J	A
Mercury	2.0	2.3	14 (≤20)	-	-
Nickel	7760	7690	0.9 (≤20)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5	98SY-T01m-W-5			
Selenium	35.5	32.8	8 (≤20)	-	-
Silver	50.0	54.1	8 (≤20)	-	-
Vanadium	1.6	1.4	13 (≤20)	-	-
Zinc	103	108	5 (≤20)	-	-
Molybdenum	310	308	0.6 (≤20)	-	-

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 98-3459

SDG	Sample	Analyte	Flag	A or P	Reason
98-3459	98SY-T01f-S-5 98SY-T01g-S-5 98SY-T01n-S-5 98SY-T06c-S-5 98SY-T06d-S-5	All TAL metals except Mercury	None	P	Matrix spike analysis
98-3459	98SY-T01f-S-5 98SY-T01g-S-5 98SY-T01n-S-5 98SY-T06c-S-5 98SY-T06d-S-5	All TAL metals except Mercury	None	P	Duplicate sample analysis
98-3459	98SY-T01f-S-5 98SY-T01g-S-5 98SY-T01n-S-5 98SY-T06c-S-5 98SY-T06d-S-5	Silver Zinc	J (all detects) J (all detects)	A	ICP serial dilution (%D)
98-3459	98SY-T01g-S-5 98SY-T01n-S-5	Barium Cadmium Mercury Selenium Molybdenum	J J J J J	A	Field duplicates (RPD)
98-3459	98SY-T01g-W-12** 98SY-T01n-W-12	Antimony Cadmium Chromium Cobalt Copper Lead Nickel Thallium	J J J J J J J J	A	Field duplicates (RPD)
98-3459	98SY-T01k-W-5 98SY-T01m-W-5	Lead	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 98-3459

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3459	98SY-M1D-1a-L-5**	Antimony Barium Cadmium Cobalt Copper Silver Zinc	7.1U ug/L 2.0U ug/L 0.59U ug/L 5.0U ug/L 62.5U ug/L 0.45U ug/L 23.1U ug/L	A
98-3459	98SY-T01f-S-5	Cadmium Copper Molybdenum	0.017U mg/Kg 4.9U mg/Kg 0.059U mg/Kg	A
98-3459	98SY-T01f-W-9	Chromium Cobalt Copper Lead Silver Thallium Zinc Molybdenum	2.4U ug/L 3.7U ug/L 12.3U ug/L 0.89U ug/L 0.32U ug/L 2.4U ug/L 11.5U ug/L 8.1U ug/L	A
98-3459	98SY-T01g-S-5	Cadmium Copper Molybdenum	0.0099U mg/Kg 5.3U mg/Kg 0.053U mg/Kg	A
98-3459	98SY-T01g-W-12**	Antimony Cadmium Chromium Cobalt Copper Thallium Zinc Molybdenum	3.1U ug/L 0.46U ug/L 2.9U ug/L 1.8U ug/L 21.1U ug/L 2.7U ug/L 10.5U ug/L 12.0U ug/L	A
98-3459	98SY-T01k-W-5	Vanadium	1.6U ug/L	A
98-3459	98SY-T01m-W-5	Lead Vanadium	2.5U ug/L 1.4U ug/L	A
98-3459	98SY-T01n-S-5	Cadmium Copper	0.0061U mg/Kg 4.9U mg/Kg	A
98-3459	98SY-T01n-W-12	Chromium Cobalt Copper Lead Thallium Zinc Molybdenum	4.0U ug/L 1.4U ug/L 10.9U ug/L 0.92U ug/L 1.8U ug/L 10.8U ug/L 11.7U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3459	98SY-T06c-S-5	Cadmium Silver Molybdenum	0.079U mg/Kg 0.12U mg/Kg 0.39U mg/Kg	A
98-3459	98SY-T06c-W-12	Chromium Cobalt Copper Nickel Thallium Vanadium Zinc Molybdenum	3.7U ug/L 1.6U ug/L 16.6U ug/L 4.5U ug/L 1.6U ug/L 0.98U ug/L 9.4U ug/L 11.5U ug/L	A
98-3459	98SY-T06d-S-5	Cadmium Molybdenum	0.052U mg/Kg 0.19U mg/Kg	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Revision # 1

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard
Project No:
Service ID: 983459
Lab Sample ID: 98-3459-4
Sample Matrix Soil
Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: 2.2

Sample ID: **98SY-T01F-S-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.1	<0.097	U	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.2		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.0	23.3		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.20	<0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.20	0.017	B	P	N	98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.51	9.9		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.51	3.2		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.51	4.9		P	N	98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.20	3.6		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.20	0.063	B	CV		98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.20	0.059	B	P	N	98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	6.3		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.51	<0.077	U	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.51	<0.054	U	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.1	<0.077	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.51	14.9		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.51	20.1		P	J E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Revision # 1

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard
Project No:
Service ID: 983459
Lab Sample ID: 98-3459-6
Sample Matrix Soil
Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: 4.2

Sample ID: **98SY-T01G-S-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.099	U	P	W N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.1		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.0	20.3		P	J	98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0099	B	P	W	98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	12.9		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	3.2		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.52	5.3		P	W	98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	1.1		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.16	B	CV	J	98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.053	B	P	W	98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	7.5		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.078	U	P	W	98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.52	< 0.055	U	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	< 0.078	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	16.8		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	22.3		P	J E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Revision # 1

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-10	Received Date:	06/16/98
Sample ID:	**98SY-T01N-S-5**	Sample Matrix	Soil	Moisture %:	5.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	< 0.10	U	P	UN	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	2.3		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	35.2		P	J	98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0061	B	P	U	98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	9.5		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	3.4		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.53	4.9		P	N	98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	4.5		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.10	B	CV	J	98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	< 0.03	U	P	UJ	98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	6.0		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	0.12	B	P	J	98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.53	< 0.056	U	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	< 0.080	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	17.4		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	23.6		P	J E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Revision # 1

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-12	Received Date:	06/16/98
Sample ID:	**98SY-T06C-S-5**	Sample Matrix	Soil	Moisture %:	7.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	< 0.10	U	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	4.6		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	150		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	< 0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	0.079	B	P	N	98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.54	24.8		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.54	15.3		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.54	25.3		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.22	7.4		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.078	B	CV		98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.22	0.39		P	N	98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	20.9		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.54	< 0.081	U	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.54	0.12	B	P	WE	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.4	< 0.081	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.54	47.9		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.54	82.3		P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Revision # 1

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-14	Received Date:	06/16/98
Sample ID:	**98SY-T06D-S-5**	Sample Matrix	Soil	Moisture %:	6.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	< 0.10	~~U~~	P	U N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	3.0		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	65.2		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.052	~~B~~	P	U	98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.54	13.9		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.54	7.7		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.54	13.3		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	4.0		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.078	B	CV		98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.19	~~B~~	P	U	98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	10.6		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.54	0.37	B	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.54	< 0.057	U	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.4	< 0.080	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.54	27.6		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.54	42.7		P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-2
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-M1D1A-L-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	7.1	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	1.7	B	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	2.0	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	0.59	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	14.6		P	J	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	5.0	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	62.5		P	U	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	5.0	B	P	J	98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	0.18	B	CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	5	131		P		98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	128		P		98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	3.9	B	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	0.45	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	<1.5	U	P		98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	10.1		P		98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	23.1		P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-5
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-T01F-W-9**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	<1.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	34.0		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	2.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	3.7	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	12.3		P	U	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	0.89	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	0.15	B	CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	5	8.1		P	U	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	10.9		P		98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	2.9	B	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	0.32	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	2.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	11.5		P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-7
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-T01G-W-12**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	3.1	B	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	3.8	B	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	54.3		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	0.46	B	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	2.9	B	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.8	B	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	21.1		P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	<0.89	U	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	5	12.0		P	U	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	38.7		P	J	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	<2.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	2.7	B	P	UJ	98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	10.5		P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
Q Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-8
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-T01K-W-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	20	558		P		98M1627L	06/22/98	06/22/98	2	6010
Arsenic	7440-38-2	µg/L	10	18.4		P		98M1627L	06/22/98	06/22/98	2	6010
Barium	7440-39-3	µg/L	20	55.9		P		98M1627L	06/22/98	06/22/98	2	6010
Beryllium	7440-41-7	µg/L	4	<0.4	U	P		98M1627L	06/22/98	06/22/98	2	6010
Cadmium	7440-43-9	µg/L	1	129		P		98M1627L	06/22/98	06/22/98	2	6010
Chromium	7440-47-3	µg/L	10	48.4		P		98M1627L	06/22/98	06/22/98	2	6010
Cobalt	7440-48-4	µg/L	10	29.5		P		98M1627L	06/22/98	06/22/98	2	6010
Copper	7440-50-8	µg/L	20	3100		P		98M1627L	06/22/98	06/22/98	2	6010
Lead	7439-92-1	µg/L	10	<1.8	U	P	W	98M1627L	06/22/98	06/22/98	2	6010
Mercury	7439-97-6	µg/L	0.5	2.0		CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	10	310		P		98M1627L	06/22/98	06/22/98	2	6010
Nickel	7440-02-0	µg/L	10	7760		P		98M1627L	06/22/98	06/22/98	2	6010
Selenium	7782-49-2	µg/L	20	35.5		P		98M1627L	06/22/98	06/22/98	2	6010
Silver	7440-22-4	µg/L	20	50.0		P		98M1627L	06/22/98	06/22/98	2	6010
Thallium	7440-28-0	µg/L	20	<3.0	U	P		98M1627L	06/22/98	06/22/98	2	6010
Vanadium	7440-62-2	µg/L	20	1.6	B	P	W	98M1627L	06/22/98	06/22/98	2	6010
Zinc	7440-66-6	µg/L	10	103		P		98M1627L	06/22/98	06/22/98	2	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard
Sample ID: **98SY-T01M-W-5**
Sample Type: Field Sample

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-9
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	20	553		P		98M1627L	06/22/98	06/22/98	2	6010
Arsenic	7440-38-2	µg/L	10	20.6		P		98M1627L	06/22/98	06/22/98	2	6010
Barium	7440-39-3	µg/L	20	56.9		P		98M1627L	06/22/98	06/22/98	2	6010
Beryllium	7440-41-7	µg/L	4	<0.4	U	P		98M1627L	06/22/98	06/22/98	2	6010
Cadmium	7440-43-9	µg/L	4	130		P		98M1627L	06/22/98	06/22/98	2	6010
Chromium	7440-47-3	µg/L	10	47.2		P		98M1627L	06/22/98	06/22/98	2	6010
Cobalt	7440-48-4	µg/L	10	25.4		P		98M1627L	06/22/98	06/22/98	2	6010
Copper	7440-50-8	µg/L	20	3080		P		98M1627L	06/22/98	06/22/98	2	6010
Lead	7439-92-1	µg/L	10	2.5	~~B~~	P	UJ	98M1627L	06/22/98	06/22/98	2	6010
Mercury	7439-97-6	µg/L	0.5	2.3		CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	10	308		P		98M1627L	06/22/98	06/22/98	2	6010
Nickel	7440-02-0	µg/L	10	7690		P		98M1627L	06/22/98	06/22/98	2	6010
Selenium	7782-49-2	µg/L	20	32.8		P		98M1627L	06/22/98	06/22/98	2	6010
Silver	7440-22-4	µg/L	20	54.1		P		98M1627L	06/22/98	06/22/98	2	6010
Thallium	7440-28-0	µg/L	20	<3.0	U	P		98M1627L	06/22/98	06/22/98	2	6010
Vanadium	7440-62-2	µg/L	20	1.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	2	6010
Zinc	7440-66-6	µg/L	10	108		P		98M1627L	06/22/98	06/22/98	2	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-11
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-T01N-W-12**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 2.1	U	P	W	98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	3.8	B	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	58.3		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	< 0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	< 0.19	U	P	W	98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	4.0	B	P	W	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.4	B	P	W	98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	10.9		P	W	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	0.92	B	P	W	98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	< 0.13	U	CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	5	11.7		P	SW	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	12.8		P	W	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	< 2.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	< 0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	1.8	B	P	W	98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	< 0.42	U	P		98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	10.8		P	SW	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: S - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard

Project No:
Service ID: 983459
Lab Sample ID: 98-3459-13
Sample Matrix Water

Collection Date: 06/16/98
Collected by: F.P./B.B.
Received Date: 06/16/98
Moisture %: -

Sample ID: **98SY-T06C-W-12**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	5.1		P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	116		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	3.7	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	1.6	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	16.6		P	U	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	3	<0.89	U	P		98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1620D	06/19/98	06/19/98	1	7470
Molybdenum	7439-98-7	µg/L	5	11.5		P	U	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	4.5	B	P	U	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	5.3	B	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	1.6	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	0.98	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	9.4		P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 2, 1998

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-M1D-1b-L-5

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 98SY-M1D-1a-L-5 and 98SY-M1D-1b-L-5 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2	Received Date:	06/16/98
Sample ID:	**98SY-M1D1A-L-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2811	Prep. No:	1 of 1	Anal. Time:	23:25
Data File Name:	3459.002	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	72
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	52
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-3	Received Date:	06/16/98
Sample ID:	**98SY-M1D1B-L-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/23/98	Anal. Date:	06/27/98
Batch No:	98G2811	Prep. No:	1 of 1	Anal. Time:	01:06
Data File Name:	3459.003	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	69
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	67
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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019722

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 2, 1998

Matrix: Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-M1D-1b-L-5

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3459	TPH as gasoline	No MS/MSD associated with these samples.	MS/MSD required.	None	P

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-M1D-1a-L-5 and 98SY-M1D-1b-L-5 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	98SY-M1D-1a-L-5	98SY-M1D-1b-L-5			
TPH as gasoline	0.11	0.3	93 (≤20)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 98-3459

SDG	Sample	Compound	Flag	A or P	Reason
98-3459	98SY-M1D-1a-L-5 98SY-M1D-1b-L-5	TPH as gasoline	None	P	Matrix spike/Matrix spike duplicates
98-3459	98SY-M1D-1a-L-5 98SY-M1D-1b-L-5	TPH as gasoline	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2	Received Date:	06/16/98
Sample ID:	**98SY-M1D1A-L-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2820	Prep. No:	–	Anal. Time:	02:51
Data File Name:	3459.002	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.11	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	93
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-3	Received Date:	06/16/98
Sample ID:	**98SY-M1D1B-L-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2820	Prep. No:	-	Anal. Time:	15:38
Data File Name:	3459.003	Sample Amount:	0.5 mL	Dilution Factor:	10 [a]
Methanol Vol.	-				
		Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.5	0.3	~~U~~ J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	77
# of out-of-control				0

[a] Sample was diluted due to foaming.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/4/98

0019792

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 2, 1998

Matrix: Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-M1D-1b-L-5

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-M1D-1a-L-5 and 98SY-M1D-1b-L-5 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	98SY-M1D-1a-L-5	98SY-M1D-1b-L-5			
TPH as diesel	0.8	0.8	0 (≤20)	-	-
TPH as motor oil	0.2	0.2	0 (≤20)	-	-

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-2	Received Date:	06/16/98
Sample ID:	**98SY-M1D1A-L-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/27/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	06:54
Data File Name:	3459.002	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.8	
2	Motor oil		mg/L	0.5	0.2	J
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		54-143	87	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9498

19829

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:		Collection Date:	06/16/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983459	Collected by:	F.P./B.B.
		Lab Sample ID:	98-3459-3	Received Date:	06/16/98
Sample ID:	**98SY-M1D1B-L-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/27/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	07:19
Data File Name:	3459.003	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.8	
2	Motor oil		mg/L	0.5	0.2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	101
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/4/98

19831

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Cyanide

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-T01f-S-5
98SY-T01f-W-9
98SY-T01g-S-5
98SY-T01g-W-12
98SY-T01k-W-5**
98SY-T01m-W-5
98SY-T01n-S-5
98SY-T01n-W-12
98SY-T06c-S-5
98SY-T06c-W-12
98SY-T06d-S-5
98SY-T01f-S-5MS
98SY-T01f-S-5MSD
98SY-T01f-S-5DUP

detections

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 soil samples and 7 water samples listed on the cover sheet. The analyses were per EPA Method 335.2 for Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01g-S-5 and 98SY-T01n-S-5, samples 98SY-T01g-W-12 and 98SY-T01n-W-12, and samples 98SY-T01k-W-5** and 98SY-T01m-W-5 were identified as field duplicates. No cyanide was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5**	98SY-T01m-W-5			
Cyanide	0.90	0.08	167 (≤20)	J	A

Long Beach Naval Shipyard
Cyanide - Data Qualification Summary - SDG 98-3459

SDG	Sample	Analyte	Flag	A or P	Reason
98-3459	98SY-T01k-W-5** 98SY-T01m-W-5	Cyanide	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Cyanide - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name: CDM Federal Programs Corp. Project No: Anal. Method 335.2
Project ID: Long Beach Naval Shipyard Service ID: 983459 Collected by: F.P./B.B.

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3459-2	98SY-M1D1A-L-5	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3459-4	98SY-T01F-S-5	Soil	06/16/98	06/16/98	06/25/98	98W3729	mg/kg	2.6	<2.6	U
98-3459-5	98SY-T01F-W-9	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3459-6	98SY-T01G-S-5	Soil	06/16/98	06/16/98	06/25/98	98W3729	mg/kg	2.6	<2.6	U
98-3459-7	98SY-T01G-W-12	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3459-8	98SY-T01K-W-5	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	0.90	
98-3459-9	98SY-T01M-W-5	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	0.08	
98-3459-10	98SY-T01N-S-5	Soil	06/16/98	06/16/98	06/25/98	98W3729	mg/kg	2.7	<2.7	U
98-3459-11	98SY-T01N-W-12	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3459-12	98SY-T06C-S-5	Soil	06/16/98	06/16/98	06/25/98	98W3729	mg/kg	2.7	<2.7	U
98-3459-13	98SY-T06C-W-12	Water	06/16/98	06/16/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3459-14	98SY-T06D-S-5	Soil	06/16/98	06/16/98	06/25/98	98W3729	mg/kg	2.7	<2.7	U
98W3665-MB-01		Water	06/22/98	06/22/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98W3729-MB-01		Soil	06/25/98	06/25/98	06/25/98	98W3729	mg/kg	2.5	<2.5	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

w9498

C020277

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Hexavalent Chromium

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5**
98SY-T01f-S-5
98SY-T01f-W-9
98SY-T01g-S-5
98SY-T01g-W-12
98SY-T01k-W-5
98SY-T01m-W-5
98SY-T01n-S-5
98SY-T01n-W-12
98SY-T06c-S-5
98SY-T06c-W-12**
98SY-T06d-S-5
98SY-T01f-W-9MS
98SY-T01f-W-9MSD
98SY-T01f-W-9DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 10 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01g-S-5 and 98SY-T01n-S-5, samples 98SY-T01g-W-12 and 98SY-T01n-W-12, and samples 98SY-T01k-W-5 and 98SY-T01m-W-5 were identified as field duplicates. No hexavalent chromium was detected in any of the samples.

Long Beach Naval Shipyard
Hexavalent Chromium - Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

Client Name: CDM Federal Programs Corp. Project No: Anal. Method 7196
Project ID: Long Beach Naval Shipyard Service ID: 983459 Collected by: F.P./B.B.

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3459-2	98SY-M1D1A-L-5	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-4	98SY-T01F-S-5	Soil	06/16/98	06/16/98	06/22/98	98W3664	mg/kg	0.10	<0.10	U
98-3459-5	98SY-T01F-W-9	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-6	98SY-T01G-S-5	Soil	06/16/98	06/16/98	06/22/98	98W3664	mg/kg	0.10	<0.10	U
98-3459-7	98SY-T01G-W-12	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-8	98SY-T01K-W-5	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-9	98SY-T01M-W-5	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-10	98SY-T01N-S-5	Soil	06/16/98	06/16/98	06/22/98	98W3664	mg/kg	0.11	<0.11	U
98-3459-11	98SY-T01N-W-12	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-12	98SY-T06C-S-5	Soil	06/16/98	06/16/98	06/22/98	98W3664	mg/kg	0.11	<0.11	U
98-3459-13	98SY-T06C-W-12	Water	06/16/98	06/16/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98-3459-14	98SY-T06D-S-5	Soil	06/16/98	06/16/98	06/22/98	98W3664	mg/kg	0.11	<0.11	U
98W3540-MB-01		Water	06/17/98	06/17/98	06/17/98	98W3540	mg/L	0.01	<0.01	U
98W3664-MB-01		Soil	06/22/98	06/22/98	06/22/98	98W3664	mg/kg	0.1	<0.1	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

1q498

020278

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 16, 1998

LDC Report Date: September 4, 1998

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3459

Sample Identification

98SY-M1D-1a-L-5
98SY-T01f-S-5
98SY-T01f-W-9
98SY-T01g-S-5**
98SY-T01g-W-12
98SY-T01k-W-5
98SY-T01m-W-5
98SY-T01n-S-5
98SY-T01n-W-12
98SY-T06c-S-5
98SY-T06c-W-12**
98SY-T06d-S-5

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 7 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 98-3459	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T01g-S-5** and 98SY-T01n-S-5, samples 98SY-T01g-W-12 and 98SY-T01n-W-12, and samples 98SY-T01k-W-5 and 98SY-T01m-W-5 were identified as field duplicates. The results are listed as follows:

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T01g-S-5**	98SY-T01n-S-5			
pH	7.77	7.52	3 (≤35)	-	-

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T01g-W-12	98SY-T01n-W-12			
pH	7.03	6.93	1 (≤20)	-	-

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T01k-W-5	98SY-T01m-W-5			
pH	7.97	7.90	1 (≤20)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 98-3459

SDG	Sample	Analyte	Flag	A or P	Reason
98-3459	98SY-M1D-1a-L-5 98SY-T01f-S-5 98SY-T01f-W-9 98SY-T01g-S-5** 98SY-T01g-W-12 98SY-T01k-W-5 98SY-T01m-W-5 98SY-T01n-S-5 98SY-T01n-W-12 98SY-T06c-S-5 98SY-T06c-W-12** 98SY-T06d-S-5	pH	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 98-3459

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: Anal. Method 9040
Project ID: Long Beach Naval Shipyard Service ID: 983459 Collected by: F.P./B.B.

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3459-2	98SY-M1D1A-L-5	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.12	
98-3459-4	98SY-T01F-S-5	Soil	06/16/98	06/16/98	06/20/98	98W3654	pH unit	0.01	7.63	
98-3459-5	98SY-T01F-W-9	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.05	
98-3459-6	98SY-T01G-S-5	Soil	06/16/98	06/16/98	06/20/98	98W3654	pH unit	0.01	7.77	
98-3459-7	98SY-T01G-W-12	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.03	
98-3459-8	98SY-T01K-W-5	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.97	
98-3459-9	98SY-T01M-W-5	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.90	
98-3459-10	98SY-T01N-S-5	Soil	06/16/98	06/16/98	06/20/98	98W3654	pH unit	0.01	7.52	
98-3459-11	98SY-T01N-W-12	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	6.93	
98-3459-12	98SY-T06C-S-5	Soil	06/16/98	06/16/98	06/20/98	98W3654	pH unit	0.01	7.80	
98-3459-13	98SY-T06C-W-12	Water	06/16/98	06/16/98	06/17/98	98W3539	pH unit	0.01	7.13	
98-3459-14	98SY-T06D-S-5	Soil	06/16/98	06/16/98	06/20/98	98W3654	pH unit	0.01	7.16	
98W3539-MB-01		Water	06/17/98	06/17/98	06/17/98	98W3539	pH unit	0.01	6.57	
98W3654-MB-01		Soil	06/20/98	06/20/98	06/20/98	98W3654	pH unit	0.01	6.57	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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cooler 1-06-16-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: COM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: San Diego State: CA Zip code: 92111

Bill to: LENEXA KANSAS office

Project Name/Code Long Beach Naval Shipyard Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: SEE BELOW

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Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	VOC, 8260B	SVOC, 8270A	CN	Metals TTLC17	Cr+6	pH	Remarks
9854-T01k-W-5		06-16-98	0930	Water	HCL	2	X						
9854-T01m-W-5		06-16-98	0930	Water	HCL	2	X						
9854-T01f-S-5		06-16-98	1000	Soil	4°C	2	X	X	X	X	X	X	
9854-T01f-W-9		06-16-98	1020	Water	HCL	2	X						
9854-T01g-S-5		06-16-98	1315	Soil	4°C	2	X		X	X	X	X	
9854-T01n-S-5		06-16-98	1315	Soil	4°C	2	X		X	X	X	X	
9854-T01g-W-12		06-16-98	1345	Water	HCL	2	X						
9854-T01n-W-12		06-16-98	1345	Water	HCL	2	X						
9854-T06c-S-5		06-16-98	1600	Soil	4°C	2	X		X	X	X	X	
9854-T06c-W-12		06-16-98	1605	Water	~~4°C~~ HCL	2	X						
9854-~~T06~~ BB T06B-S-5		06-16-98	1700	Soil	4°C	2	X		X	X	X	X	
BB 9854-B1K-W-12		06-16-98	1705	Water	HCL	2	X		BB				

BB and Juan P

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [X] Extended Raw Data BB [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. If not specified, samples will be discarded 45 days after samples are received.

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Juan P Date/Time 6/16/98 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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Cooler 1-06-16-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 2 of 2

Client: CDM FEDERAL Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENENA KANSAS ACTIVITY

Project Name/Code Long Beach Naval Shipyard IR, Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: SEE BELOW

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOC 8260B	TPHg 8015m	PCB, 8082	TPH-DRO 8015m	SVOC, 8270C	Metals, Title 17	Cr6	LH	CN				Remarks
9854-MIDa-L-5		06-16-98	1545	Aqueous	HCL	2	X												
9854-MIDa-L-5		06-16-98	1545	Aqueous	HCL	2		X											
9854-MIDb-L-5		06-16-98	1545	Aqueous	HCL	2		X											
9854-MIDa-L-5		06-16-98	1545	Aqueous	4°C	1			X										
9854-MIDb-L-5		06-16-98	1545	Aqueous	4°C	1			X										
9854-MIDa-L-5		06-16-98	1545	Aqueous	4°C	1				X									
9854-MIDb-L-5		06-16-98	1545	Aqueous	4°C	1				X									
9854-MIDa-L-5		06-16-98	1545	Aqueous	4°C	1					X								
9854-MIDa-L-5		06-16-98	1545	Aqueous	HNO3	1						X							
9854-MIDa-L-5		06-16-98	1545	Aqueous	4°C								X	X					
9854-MIDa-L-5		06-16-98	1545	Aqueous	NaOH										X				
9854-BTIK-W-10		06-16-98	0800	Water	HCL	2	X												
BB Trip Blank																			

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Date/Time 6/16/98 / 1600 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

BB

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Cooler 2- 06-16-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas Office

Project Name/Code: Long Beach Naval Shipyard APC Job #6210-014 P.O. #

Project Address: Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by:

White – With report
Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOC 8270C	Metals 7LL17	CN	Cr+	pH	Remarks
98SY-T01k-W-5		06-16-98	0930	Water	4°C	1	X					Standing liquid sample
98SY-T01k-W-5		06-16-98	0930	Water	HNO_3	1		X				
98SY-T01k-W-5		06-16-98	0930	Water	NaOH	1			X			
98SY-T01k-W-5		06-16-98	0930	Water	4°C	1				X	X	
98SY-T01m-W-5		06-16-98	0930	Water	4°C	1	X					
98SY-T01m-W-5		06-16-98	0930	Water	HNO_3	1		X				
98SY-T01m-W-5		06-16-98	0930	Water	NaOH	1			X			
98SY-T01m-W-5		06-16-98	0930	Water	4°C	1				X	X	
98SY-T01f-W-9		06-16-98	1020	Water	4°C NaOH	1	X					
98SY-T01f-W-9		06-16-98	1020	Water	~~NaOH~~	1			X			
98SY-T01f-W-9		06-16-98	1020	Water	HNO_3	1		X				
98SY-T01f-W-9		06-16-98	1020	Water	4°C	1				X	X	
Frank Pe	BBoyd											

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [ ] Raw Data; [X] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Pe Date/Time 6/16/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

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Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy st, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa Kansas Office

Project Name/Code: Long Beach Naval Shipyard Job #6210-014 P.O. #

Project Address: Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by:

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Metals TTLC17	CN	Cr+6	pH								Remarks
985Y-TØ1g-W-12		6-16-98	1345	Water	NaOH	1		X										
985Y-TØ1g-W-12		6-16-98	1345	Water	4°C	1			X	X								
985Y-TØ1g-W-12		6-1698	1345	Water	HNO_3	1	X											
985Y-TØ1n-W-12		6-16-98	1345	water	NaOH	1		X										
985Y-TØ1n-W-12		6-1698	1345	water	4°C	1			X	X								
985Y-TØ1n-W-12		6-1698	1345	water	HNO_3	1	X											
985Y-TØ6c-W-12		06-16-98	1605	Water	$NaOH$	1		X										
985Y-TØ6c-W-12		06-16-98	1605	Water	HNO_3	1	X											
985Y-TØ6c-W-12		06-16-98	1605	Water	4°C	1			X	X								
Frank Pace ISG-cd																		

Analysis Items

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Pink – Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Pace Date/Time 6/16/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients unde[r]stand that all terms described in the proposals, quotations for this project, and/or th[e] general terms provided in the current APCL price schedules will be followed. APCL r[eserv]es the right to terminat[e] service or withhold delivery of any reports, if in APCL's sole discretion the terms [of] project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-BT1I-W-10
98SY-M1Pa-S-0**
98SY-RE2e-W-10
98SY-RE2f-W-10
98SY-T05a-S-1
98SY-T05a-W-7
98SY-T07b-S-5
98SY-T07c-S-5**
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-BT1I-W-10MS
98SY-BT1I-W-10MSD
98SY-T05a-S-1MS
98SY-T05a-S-1MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 9 soil samples and 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 with the following exceptions:

Date	Compound	r^2	Associated Samples	Flag	A or P
6/26/98	Trichlorofluoromethane	0.945	All soil samples in SDG 98-3466	J	A

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/24/98	Methylene chloride	36.2	98SY-BT1I-W-10MS 98SY-BT1I-W-10MSD 98G2816MB01	J	A

Date	Compound	%D	Associated Samples	Flag	A or P
6/25/98	Methylene chloride	33.7	98SY-RE2f-W-10	J	A
	Isopropylbenzene	28.5	98SY-T05a-W-7	J	
	1,2,3-Trimethylbenzene	29.4	98SY-T10c-W-10	J	
	tert-Butylbenzene	28.5	98G2816MB02	J	
	1,2,4-Trimethylbenzene	28.4		J	
	1,3-Dichlorobenzene	29.3		J	
	sec-Butylbenzene	31.2		J	
	p-Isopropyltoluene	30.2		J	
	1,2-Dichlorobenzene	30.6		J	
	n-Butylbenzene	34.5		J	
	1,2,4-Trichlorobenzene	34.1		J	
	1,2,3-Trichlorobenzene	35.5		J	
	Hexachlorobutadiene	46.1		J	
6/29/98	Trichlorofluoromethane	28.6	98SY-M1Pa-S-0**	J	A
			98SY-T05a-S-1		
			98SY-T07b-S-5		
			98SY-T10c-S-5		
			98SY-T05a-S-1MS		
			98SY-T05a-S-1MSD		
			98G2874MB01		
7/1/98	Methylene chloride	41.4	98SY-BT1l-W-10	J	A
	Isopropylbenzene	29.0	98SY-RE2e-W-10	J	
	n-Butylbenzene	37.4	98G2903MB01	J	
	1,2,3-Trichlorobenzene	42.2		J	

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 98SY-BT1k-W-10 was identified as a trip blank. No volatile contaminants were found in this blank.

Samples 98SY-RE2e-W-10 and 98SY-RE2f-W-10 were identified as rinsates. No volatile contaminants were found in these blanks with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
98SY-RE2f-W-10	Chloroform	1
	Toluene	0.8

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-RE2f-W-10 98SY-T05a-W-7 98SY-T07c-S-5** 98SY-T10c-W-10 98SY-T10d-S-0 98SY-T10e-S-5	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-RE2f-W-10 98SY-T05a-W-7 98SY-T07c-S-5** 98SY-T10c-W-10 98SY-T10d-S-0 98SY-T10e-S-5 98G2816MB02 98G2874MB02	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	J	P

Percent recoveries (%R) were within QC limits.

The samples and associated blanks are qualified as estimated (J) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which

a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-T10c-S-5 and 98SY-T10e-S-5 were identified as field duplicates. No volatiles were detected in any of the samples.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 98-3466

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0** 98SY-T05a-S-1 98SY-T07b-S-5 98SY-T07c-S-5** 98SY-T10c-S-5 98SY-T10d-S-0 98SY-T10e-S-5	Trichlorofluoromethane	J	A	Initial calibration (r^2)
98-3466	98SY-RE2f-W-10 98SY-T05a-W-7 98SY-T10c-W-10	Methylene chloride Isopropylbenzene 1,2,3-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene 1,3-Dichlorobenzene sec-Butylbenzene p-Isopropyltoluene 1,2-Dichlorobenzene n-Butylbenzene 1,2,4-Trichlorobenzene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J J J J J J J J J J J J J	A	Continuing calibration (%D)
98-3466	98SY-M1Pa-S-0** 98SY-T05a-S-1 98SY-T07b-S-5 98SY-T10c-S-5	Trichlorofluoromethane	J	A	Continuing calibration (%D)
98-3466	98SY-BT1I-W-10 98SY-RE2e-W-10	Methylene chloride Isopropylbenzene n-Butylbenzene 1,2,3-Trichlorobenzene	J J J J	A	Continuing calibration (%D)
98-3466	98SY-RE2f-W-10 98SY-T05a-W-7 98SY-T07c-S-5** 98SY-T10c-W-10 98SY-T10d-S-0 98SY-T10e-S-5	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
98-3466	98SY-RE2f-W-10 98SY-T05a-W-7 98SY-T07c-S-5** 98SY-T10c-W-10 98SY-T10d-S-0 98SY-T10e-S-5	All TCL compounds	J	P	Laboratory control samples

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-1	Received Date:	06/17/98
Sample ID:	**98SY-BT1L-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	07/01/98	Anal. Date:	07/01/98
Batch No:	98G2903	Prep. No:	-	Anal. Time:	14:42
Data File Name:	3466-01A	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	~~U~~ UJ
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	~~U~~ UJ
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	97
2	Dibromofluoromethane	1868-53-7	86-117	93
3	1,2-Dichloroethane-d4	17060-07-0	80-119	99
4	Toluene-d8	2037-26-5	88-109	99
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	109
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	123
3	Fluorobenzene	462-06-6	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-2	Received Date:	06/17/98
Sample ID:	**98SY-M1PA-S-0**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/29/98	Anal. Date:	06/29/98
Batch No:	98G2874	Prep. No:	–	Anal. Time:	15:27
Data File Name:	3466-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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QUAL

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	UW
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	99
2	Dibromofluoromethane	1868-53-7	80-119	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	107
4	Toluene-d8	2037-26-5	81-116	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	101
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-9	Received Date:	06/17/98
Sample ID:	**98SY-RE2E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	07/01/98	Anal. Date:	07/01/98
Batch No:	98G2903	Prep. No:	-	Anal. Time:	15:21
Data File Name:	3466-09A	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	~~U~~ UJ
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	~~U~~ UJ
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	~~U~~ UJ
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	114
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	88-109	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-10	Received Date:	06/17/98
Sample ID:	**98SY-RE2F-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2816	Prep. No:	-	Anal. Time:	11:09
Data File Name:	3466-10	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

211448

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	0.8	J
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	98
2	Dibromofluoromethane	1868-53-7	86-117	89
3	1,2-Dichloroethane-d4	17060-07-0	80-119	101
4	Toluene-d8	2037-26-5	88-109	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	107
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	117
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

21449

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-11	Received Date:	06/17/98
Sample ID:	**98SY-T05A-S-1**	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/29/98	Anal. Date:	06/29/98
Batch No:	98G2874	Prep. No:	–	Anal. Time:	16:03
Data File Name:	3466-11	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

21453

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	96
2	Dibromofluoromethane	1868-53-7	80-119	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	109
4	Toluene-d8	2037-26-5	81-116	98
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	112
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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21454

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-12	Received Date:	06/17/98
Sample ID:	**98SY-T05A-W-7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2816	Prep. No:	-	Anal. Time:	11:55
Data File Name:	3466-12	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	0.5	J
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

21457

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	99
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	116
4	Toluene-d8	2037-26-5	88-109	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	116
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	130
3	Fluorobenzene	462-06-6	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-13	Received Date:	06/17/98
Sample ID:	**98SY-T07B-S-5**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/29/98	Anal. Date:	06/29/98
Batch No:	98G2874	Prep. No:	–	Anal. Time:	18:27
Data File Name:	3466-13	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	97
2	Dibromofluoromethane	1868-53-7	80-119	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	112
4	Toluene-d8	2037-26-5	81-116	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	98
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
3	Fluorobenzene	462-06-6	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-14	Received Date:	06/17/98
Sample ID:	**98SY-T07C-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2874	Prep. No:	-	Anal. Time:	03:18
Data File Name:	3466-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	107
2	Dibromofluoromethane	1868-53-7	80-119	104
3	1,2-Dichloroethane-d4	17060-07-0	80-119	119
4	Toluene-d8	2037-26-5	81-116	113
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	88
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	89
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/29/98	Anal. Date:	06/29/98
Batch No:	98G2874	Prep. No:	-	Anal. Time:	19:02
Data File Name:	3466-15	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	UW
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	95
2	Dibromofluoromethane	1868-53-7	80-119	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	113
4	Toluene-d8	2037-26-5	81-116	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	93
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	**98SY-T10C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2816	Prep. No:	-	Anal. Time:	12:40
Data File Name:	3466-16	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	0.5	J
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	0.3	J
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	1	J
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	3	J
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	0.6	J
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	107
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	108
4	Toluene-d8	2037-26-5	88-109	107
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	105
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	115
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	**98SY-T10D-S-0**	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2874	Prep. No:	-	Anal. Time:	08:58
Data File Name:	3466-17	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.1	< 5.1	U
2	Bromobenzene	108-86-1	µg/kg	5.1	< 5.1	U
3	Bromochloromethane	74-97-5	µg/kg	5.1	< 5.1	U
4	Bromodichloromethane	75-27-4	µg/kg	5.1	< 5.1	U
5	Bromoform	75-25-2	µg/kg	5.1	< 5.1	U
6	Bromomethane	74-83-9	µg/kg	5.1	< 5.1	U
7	n-Butylbenzene	104-51-8	µg/kg	5.1	< 5.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.1	< 5.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.1	< 5.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.1	< 5.1	U
11	Chlorobenzene	108-90-7	µg/kg	5.1	< 5.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.1	< 5.1	U
13	Chloroethane	75-00-3	µg/kg	5.1	< 5.1	U
14	Chloroform	67-66-3	µg/kg	5.1	< 5.1	U
15	Chloromethane	74-87-3	µg/kg	5.1	< 5.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.1	< 5.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.1	< 5.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.1	< 5.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.1	< 5.1	U
20	Dibromomethane	74-95-3	µg/kg	5.1	< 5.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.1	< 5.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.1	< 5.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.1	< 5.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.1	< 5.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.1	< 5.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.1	< 5.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.1	< 5.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.1	< 5.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.1	< 5.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.1	< 5.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.1	< 5.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.1	< 5.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.1	< 5.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.1	< 5.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.1	< 5.1	U
36	Ethylbenzene	100-41-4	µg/kg	5.1	< 5.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.1	< 5.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.1	< 5.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.1	< 5.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.1	< 5.1	U
41	Naphthalene	91-20-3	µg/kg	5.1	< 5.1	U
42	n-Propylbenzene	103-65-1	µg/kg	5.1	< 5.1	U
43	Styrene	100-42-5	µg/kg	5.1	< 5.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.1	< 5.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.1	< 5.1	U
46	Tetrachloroethene	127-18-4	µg/kg	5.1	< 5.1	U
47	Toluene	108-88-3	µg/kg	5.1	< 5.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.1	< 5.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.1	< 5.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.1	< 5.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.1	< 5.1	U
52	Trichloroethene	79-01-6	µg/kg	5.1	< 5.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.1	< 5.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.1	< 5.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.1	< 5.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.1	< 5.1	U
57	Vinyl chloride	75-01-4	µg/kg	5.1	< 5.1	U
58	o-Xylene	95-47-6	µg/kg	5.1	< 5.1	U
59	m/p-Xylene	108-38-3	µg/kg	5.1	< 5.1	U
60	Xylenes (total)	1330-20-7	µg/kg	5.1	< 5.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	106
2	Dibromofluoromethane	1868-53-7	80-119	101
3	1,2-Dichloroethane-d4	17060-07-0	80-119	106
4	Toluene-d8	2037-26-5	81-116	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	114
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	105
3	Fluorobenzene	462-06-6	50-200	117
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	**98SY-T10E-S-5**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2874	Prep. No:	–	Anal. Time:	09:40
Data File Name:	3466-18	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
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18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
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31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
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37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
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42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
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49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
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56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
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Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	98
2	Dibromofluoromethane	1868-53-7	80-119	97
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	81-116	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	104
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
3	Fluorobenzene	462-06-6	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Oil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0
98SY-M4Fa-L-0.5
98SY-RE2e-W-10
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T10e-W-10

Introduction

This data review covers 4 soil samples, one oil sample, and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample 98SY-RE2e-W-10 was identified as a rinsate. No semivolatile contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
98SY-M1Pa-S-0	2-Fluorophenol Phenol-d5 2,4,6-Tribromophenol	2 (25-120) 6 (25-112) 9 (19-121)	All acid compounds	J (all detects) R (all non-detects)	P
98SY-M1Pa-S-0	2-Fluorobiphenyl Nitrobenzene-d5 Terphenyl-d14	13 (30-114) 11 (23-119) 15 (19-136)	All base neutral compounds	J	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3466	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
98SY-T10d-S-0	Perylene-d12	95356 (127129-508516)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
98SY-M1Pa-S-0	Perylene-d12	99909 (127129-508516)	Di-n-octylphthalate	J	P
			Benzo(b)fluoranthene	J	
			Benzo(k)fluoranthene	J	
			Benzo(a)pyrene	J	
			Indeno(1,2,3-cd)pyrene	J	
			Dibenz(a,h)anthracene	J	
			Benzo(g,h,i)perylene	J	

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-T10c-S-5 and 98SY-T10e-S-5 and samples 98SY-T10c-W-10 and 98SY-T10e-W-10 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	98SY-T10c-W-10	98SY-T10e-W-10			
Bis(2-ethylhexyl)phthalate	110	23	130 (≤20)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 98-3466

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0	Phenol 2-Chlorophenol 2-Methylphenol 4-Methylphenol 2-Nitrophenol 2,4-Dimethylphenol 2,4-Dichlorophenol 4-Chloro-3-methylphenol 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2,4-Dinitrophenol 4-Nitrophenol 4,6-Dinitro-2-methylphenol Pentachlorophenol	J (all detects) R (all non-detects)	P	Surrogate spikes (%R)

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0	Bis(2-chloroethyl) ether	J	P	Surrogate spikes (%R)
		1,3-Dichlorobenzene	J		
		1,4-Dichlorobenzene	J		
		1,2-Dichlorobenzene	J		
		2,2'-Oxybis(1-chloropropane)	J		
		N-Nitroso-di-n-propylamine	J		
		Hexachloroethane	J		
		Nitrobenzene	J		
		Isophorone	J		
		Bis(2-chloroethoxy)methane	J		
		1,2,4-Trichlorobenzene	J		
		Naphthalene	J		
		4-Chloroaniline	J		
		Hexachlorobutadiene	J		
		2-Methylnaphthalene	J		
		Hexachlorocyclopentadiene	J		
		2-Chloronaphthalene	J		
		2-Nitroaniline	J		
		Dimethylphthalate	J		
		Acenaphthylene	J		
		2,6-Dinitrotoluene	J		
		3-Nitroaniline	J		
		Acenaphthene	J		
		Dibenzofuran	J		
		2,4-Dinitrotoluene	J		
		Diethylphthalate	J		
		4-Chlorophenylphenyl ether	J		
		Fluorene	J		
		4-Nitroaniline	J		
		N-Nitrosodiphenylamine	J		
		4-Bromophenylphenyl ether	J		
		Hexachlorobenzene	J		
		Phenanthrene	J		
		Anthracene	J		
		Carbazole	J		
		Di-n-butylphthalate	J		
		Fluoranthene	J		
		Pyrene	J		
		Butylbenzylphthalate	J		
		3,3'-Dichlorobenzidine	J		
		Benzo(a)anthracene	J		
		Chrysene	J		
		Bis(2-ethylhexyl)phthalate	J		
		Di-n-octylphthalate	J		
		Benzo(b)fluoranthene	J		
		Benzo(k)fluoranthene	J		
		Benzo(a)pyrene	J		
		Indeno(1,2,3-cd)pyrene	J		
		Dibenz(a,h)anthracene	J		
		Benzo(g,h,i)perylene	J		
98-3466	98SY-M1Pa-S-0 98SY-M4Fa-L-0.5 98SY-RE2e-W-10 98SY-T10c-S-5 98SY-T10c-W-10 98SY-T10d-S-0 98SY-T10e-S-5 98SY-T10e-W-10	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-T10d-S-0 98SY-M1Pa-S-0	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	P	Internal standards (area)
98-3466	98SY-T10c-W-10 98SY-T10e-W-10	Bis(2-ethylhexyl)phthalate	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-2	Received Date:	06/17/98
Sample ID:	**98SY-M1PA-S-0**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	04:35
Data File Name:	3466-02	Sample Amount:	30 g	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	250	J
5	Benzo(a)pyrene	50-32-8	µg/kg	520	230	J
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	470	J
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	170	J
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	4100	
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	210	J
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	533	
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	130	J
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	903	
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	UJ
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	UR
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	URJ
48	Naphthalene	91-20-3	µg/kg	520	< 520	UJ
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	UR
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	UR
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	UJ
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	UJ
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	UR
58	Phenanthrene	85-01-8	µg/kg	520	300	J
59	Phenol	108-95-2	µg/kg	520	< 520	UJ
60	Pyrene	129-00-0	µg/kg	520	598	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	UJ
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	UR
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	UR
64	Carbazole	86-74-8	µg/kg	520	< 520	UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	13
2	2-Fluorophenol	367-12-4	25-120	2
3	Nitrobenzene-d5	4165-60-0	23-119	11
4	Phenol-d5	4165-62-2	25-112	6
5	Terphenyl-d14	1718-51-0	19-136	15
6	2,4,6-Tribromophenol	118-79-6	19-121	9
# of out-of-control				6

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	73
2	Chrysene-d12	1719-03-5	50-200	84
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	68
4	Naphthalene-d8	1146-65-2	50-200	72
5	Perylene-d12	1520-96-3	50-200	39
6	Phenanthrene-d10	1517-22-2	50-200	74
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-3	Received Date:	06/17/98
Sample ID:	**98SY-M4FA-L-0.5**	Sample Matrix	Oil	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	06:27
Data File Name:	3466-03A	Sample Amount:	0.1 g	Dilution Factor:	12000
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	mg/kg	6000	< 6000	U
2	Acenaphthylene	208-96-8	mg/kg	6000	< 6000	U
3	Anthracene	120-12-7	mg/kg	6000	< 6000	U
4	Benz(a)anthracene	56-55-3	mg/kg	6000	< 6000	U
5	Benzo(a)pyrene	50-32-8	mg/kg	6000	< 6000	U
6	Benzo(b)fluoranthene	205-99-2	mg/kg	6000	< 6000	U
7	Benzo(g,h,i)perylene	191-24-2	mg/kg	6000	< 6000	U
8	Benzo(k)fluoranthene	207-08-9	mg/kg	6000	< 6000	U
9	Bis(2-chloroethoxy) methane	111-91-1	mg/kg	6000	< 6000	U
10	Bis(2-chloroethyl) ether	111-44-4	mg/kg	6000	< 6000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	mg/kg	6000	< 6000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	mg/kg	6000	< 6000	U
13	4-Bromophenyl phenyl ether	101-55-3	mg/kg	6000	< 6000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	mg/kg	6000	< 6000	U
15	4-Chloro-3-methylphenol	59-50-7	mg/kg	12000	< 12000	U
16	4-Chloroaniline	106-47-8	mg/kg	12000	< 12000	U
17	2-Chloronaphthalene	91-58-7	mg/kg	6000	< 6000	U
18	2-Chlorophenol	95-57-8	mg/kg	6000	< 6000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	6000	< 6000	U
20	Chrysene	218-01-9	mg/kg	6000	< 6000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	mg/kg	6000	< 6000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	mg/kg	6000	< 6000	U
23	Dibenz(a,h)anthracene	53-70-3	mg/kg	6000	< 6000	U
24	Dibenzofuran	132-64-9	mg/kg	6000	< 6000	U
25	1,2-Dichlorobenzene	95-50-1	mg/kg	6000	< 6000	U
26	1,3-Dichlorobenzene	541-73-1	mg/kg	6000	< 6000	U
27	1,4-Dichlorobenzene	106-46-7	mg/kg	6000	< 6000	U
28	3,3'-Dichlorobenzidine	91-94-1	mg/kg	12000	< 12000	U
29	2,4-Dichlorophenol	120-83-2	mg/kg	6000	< 6000	U
30	Diethyl phthalate (DEP)	84-66-2	mg/kg	6000	< 6000	U
31	Dimethyl phthalate (DMP)	131-11-3	mg/kg	6000	< 6000	U
32	2,4-Dimethylphenol	105-67-9	mg/kg	6000	< 6000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	30000	< 30000	U
34	2,4-Dinitrophenol	51-28-5	mg/kg	30000	< 30000	U
35	2,4-Dinitrotoluene	121-14-2	mg/kg	6000	< 6000	U
36	2,6-Dinitrotoluene	606-20-2	mg/kg	6000	< 6000	U
37	Fluoranthene	206-44-0	mg/kg	6000	< 6000	U
38	Fluorene	86-73-7	mg/kg	6000	< 6000	U
39	Hexachlorobenzene	118-74-1	mg/kg	6000	< 6000	U
40	Hexachlorobutadiene	87-68-3	mg/kg	6000	< 6000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	mg/kg	6000	< 6000	U
42	Hexachloroethane	67-72-1	mg/kg	6000	< 6000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	6000	< 6000	U
44	Isophorone	78-59-1	mg/kg	6000	< 6000	U
45	2-Methylnaphthalene	91-57-6	mg/kg	6000	< 6000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	mg/kg	6000	< 6000	U
47	2-Methylphenol (o-Cresol)	95-48-7	mg/kg	6000	< 6000	U
48	Naphthalene	91-20-3	mg/kg	6000	< 6000	U
49	2-Nitroaniline	88-74-4	mg/kg	30000	< 30000	U
50	3-Nitroaniline	99-09-2	mg/kg	30000	< 30000	U
51	4-Nitroaniline	100-01-6	mg/kg	30000	< 30000	U
52	Nitrobenzene	98-95-3	mg/kg	6000	< 6000	U
53	2-Nitrophenol	88-75-5	mg/kg	30000	< 30000	U
54	4-Nitrophenol	100-02-7	mg/kg	6000	< 6000	U
55	N-Nitroso-di-n-propylamine	621-64-7	mg/kg	6000	< 6000	U
56	N-Nitrosodiphenylamine	86-30-6	mg/kg	6000	< 6000	U
57	Pentachlorophenol (PCP)	87-86-5	mg/kg	30000	< 30000	U
58	Phenanthrene	85-01-8	mg/kg	6000	< 6000	U
59	Phenol	108-95-2	mg/kg	6000	< 6000	U
60	Pyrene	129-00-0	mg/kg	6000	< 6000	U
61	1,2,4-Trichlorobenzene	120-82-1	mg/kg	6000	< 6000	U
62	2,4,5-Trichlorophenol	95-95-4	mg/kg	6000	< 6000	U
63	2,4,6-Trichlorophenol	88-06-2	mg/kg	6000	< 6000	U
64	Carbazole	86-74-8	mg/kg	6000	< 6000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	0
2	2-Fluorophenol	367-12-4	25-120	0
3	Nitrobenzene-d5	4165-60-0	23-119	0
4	Phenol-d5	4165-62-2	25-112	0
5	Terphenyl-d14	1718-51-0	19-136	0
6	2,4,6-Tribromophenol	118-79-6	19-121	0
# of out-of-control				6

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	83
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	71
6	Phenanthrene-d10	1517-22-2	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-9	Received Date:	06/17/98
Sample ID:	**98SY-RE2E-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	20:49
Data File Name:	3466-09B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	<10	U
42	Hexachloroethane	67-72-1	µg/L	10	<10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	<10	U
44	Isophorone	78-59-1	µg/L	10	<10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	<10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	<10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	<10	U
48	Naphthalene	91-20-3	µg/L	10	<10	U
49	2-Nitroaniline	88-74-4	µg/L	50	<50	U
50	3-Nitroaniline	99-09-2	µg/L	50	<50	U
51	4-Nitroaniline	100-01-6	µg/L	50	<50	U
52	Nitrobenzene	98-95-3	µg/L	10	<10	U
53	2-Nitrophenol	88-75-5	µg/L	10	<10	U
54	4-Nitrophenol	100-02-7	µg/L	50	<50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	<10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	<10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	<50	U
58	Phenanthrene	85-01-8	µg/L	10	<10	U
59	Phenol	108-95-2	µg/L	10	<10	U
60	Pyrene	129-00-0	µg/L	10	<10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	<10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	<10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	<10	U
64	Carbazole	86-74-8	µg/L	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	46
2	2-Fluorophenol	367-12-4	21- 99	50
3	Nitrobenzene-d5	4165-60-0	35-113	45
4	Phenol-d5	4165-62-2	10- 93	48
5	Terphenyl-d14	1718-51-0	33-140	72
6	2,4,6-Tribromophenol	118-79-6	10-122	40
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	100
2	Chrysene-d12	1719-03-5	50-200	94
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	03:20
Data File Name:	3466-15	Sample Amount:	30 g	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U
64	Carbazole	86-74-8	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	49
2	2-Fluorophenol	367-12-4	25-120	45
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	25-112	46
5	Terphenyl-d14	1718-51-0	19-136	57
6	2,4,6-Tribromophenol	118-79-6	19-121	35
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	73
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	71
4	Naphthalene-d8	1146-65-2	50-200	77
5	Perylene-d12	1520-96-3	50-200	73
6	Phenanthrene-d10	1517-22-2	50-200	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	**98SY-T10C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	21:26
Data File Name:	3466-16B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	110	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U
64	Carbazole	86-74-8	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	47
2	2-Fluorophenol	367-12-4	21- 99	52
3	Nitrobenzene-d5	4165-60-0	35-113	48
4	Phenol-d5	4165-62-2	10- 93	50
5	Terphenyl-d14	1718-51-0	33-140	75
6	2,4,6-Tribromophenol	118-79-6	10-122	42
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	109
2	Chrysene-d12	1719-03-5	50-200	91
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	103
4	Naphthalene-d8	1146-65-2	50-200	109
5	Perylene-d12	1520-96-3	50-200	101
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	**98SY-T10D-S-0**	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	03:58
Data File Name:	3466-17	Sample Amount:	30 g	Dilution Factor:	4
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2000	< 2000	U
2	Acenaphthylene	208-96-8	µg/kg	2000	< 2000	U
3	Anthracene	120-12-7	µg/kg	2000	< 2000	U
4	Benz(a)anthracene	56-55-3	µg/kg	2000	< 2000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2000	< 2000	U UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2000	< 2000	U UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2000	< 2000	U UJ
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2000	< 2000	U UJ
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2000	< 2000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2000	< 2000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2000	< 2000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2000	6900	
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2000	< 2000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2000	< 2000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4100	< 4100	U
16	4-Chloroaniline	106-47-8	µg/kg	4100	< 4100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2000	< 2000	U
18	2-Chlorophenol	95-57-8	µg/kg	2000	< 2000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2000	< 2000	U
20	Chrysene	218-01-9	µg/kg	2000	860	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2000	< 2000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2000	< 2000	U UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2000	< 2000	U UJ
24	Dibenzofuran	132-64-9	µg/kg	2000	< 2000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2000	< 2000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2000	< 2000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2000	< 2000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4100	< 4100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2000	< 2000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2000	< 2000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2000	< 2000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2000	< 2000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	10000	< 10000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	10000	< 10000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2000	< 2000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2000	< 2000	U
37	Fluoranthene	206-44-0	µg/kg	2000	930	J
38	Fluorene	86-73-7	µg/kg	2000	< 2000	U
39	Hexachlorobenzene	118-74-1	µg/kg	2000	< 2000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2000	< 2000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2000	<2000	U
42	Hexachloroethane	67-72-1	µg/kg	2000	<2000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2000	<2000	U W
44	Isophorone	78-59-1	µg/kg	2000	<2000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2000	<2000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2000	<2000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2000	<2000	U
48	Naphthalene	91-20-3	µg/kg	2000	<2000	U
49	2-Nitroaniline	88-74-4	µg/kg	10000	<10000	U
50	3-Nitroaniline	99-09-2	µg/kg	10000	<10000	U
51	4-Nitroaniline	100-01-6	µg/kg	10000	<10000	U
52	Nitrobenzene	98-95-3	µg/kg	2000	<2000	U
53	2-Nitrophenol	88-75-5	µg/kg	2000	<2000	U
54	4-Nitrophenol	100-02-7	µg/kg	10000	<10000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2000	<2000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2000	<2000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	10000	<10000	U
58	Phenanthrene	85-01-8	µg/kg	2000	520	J
59	Phenol	108-95-2	µg/kg	2000	<2000	U
60	Pyrene	129-00-0	µg/kg	2000	<2000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2000	<2000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2000	<2000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2000	<2000	U
64	Carbazole	86-74-8	µg/kg	2000	<2000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	26
2	2-Fluorophenol	367-12-4	25-120	0
3	Nitrobenzene-d5	4165-60-0	23-119	15
4	Phenol-d5	4165-62-2	25-112	10
5	Terphenyl-d14	1718-51-0	19-136	51
6	2,4,6-Tribromophenol	118-79-6	19-121	17
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	84
2	Chrysene-d12	1719-03-5	50-200	84
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
4	Naphthalene-d8	1146-65-2	50-200	82
5	Perylene-d12	1520-96-3	50-200	38
6	Phenanthrene-d10	1517-22-2	50-200	82
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	**98SY-T10E-S-5**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/26/98	Anal. Date:	07/02/98
Batch No:	98G2855	Prep. No:	1 of 1	Anal. Time:	03:58
Data File Name:	3466-18	Sample Amount:	30 g	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U
64	Carbazole	86-74-8	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	44
2	2-Fluorophenol	367-12-4	25-120	29
3	Nitrobenzene-d5	4165-60-0	23-119	41
4	Phenol-d5	4165-62-2	25-112	37
5	Terphenyl-d14	1718-51-0	19-136	54
6	2,4,6-Tribromophenol	118-79-6	19-121	30
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	72
2	Chrysene-d12	1719-03-5	50-200	83
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	68
4	Naphthalene-d8	1146-65-2	50-200	74
5	Perylene-d12	1520-96-3	50-200	73
6	Phenanthrene-d10	1517-22-2	50-200	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-19	Received Date:	06/17/98
Sample ID:	**98SY-T10E-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Z
Anal. Method:	8270C	Prep. Date:	06/19/98	Anal. Date:	06/28/98
Batch No:	98G2766	Prep. No:	1 of 1	Anal. Time:	22:04
Data File Name:	3466-19B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	<10	U
2	Acenaphthylene	208-96-8	µg/L	10	<10	U
3	Anthracene	120-12-7	µg/L	10	<10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	<10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	<10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	<10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	<10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	<10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	<10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	<10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	<10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	23	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	<10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	<10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	<20	U
16	4-Chloroaniline	106-47-8	µg/L	20	<20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	<10	U
18	2-Chlorophenol	95-57-8	µg/L	10	<10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	<10	U
20	Chrysene	218-01-9	µg/L	10	<10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	<10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	<10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	<10	U
24	Dibenzofuran	132-64-9	µg/L	10	<10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	<10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	<10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	<10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	<10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	<10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	<10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	<10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	<10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	<50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	<50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	<10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	<10	U
37	Fluoranthene	206-44-0	µg/L	10	<10	U
38	Fluorene	86-73-7	µg/L	10	<10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	<10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	<10	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	<10	U
42	Hexachloroethane	67-72-1	µg/L	10	<10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	<10	U
44	Isophorone	78-59-1	µg/L	10	<10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	<10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	<10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	<10	U
48	Naphthalene	91-20-3	µg/L	10	<10	U
49	2-Nitroaniline	88-74-4	µg/L	50	<50	U
50	3-Nitroaniline	99-09-2	µg/L	50	<50	U
51	4-Nitroaniline	100-01-6	µg/L	50	<50	U
52	Nitrobenzene	98-95-3	µg/L	10	<10	U
53	2-Nitrophenol	88-75-5	µg/L	10	<10	U
54	4-Nitrophenol	100-02-7	µg/L	50	<50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	<10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	<10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	<50	U
58	Phenanthrene	85-01-8	µg/L	10	<10	U
59	Phenol	108-95-2	µg/L	10	<10	U
60	Pyrene	129-00-0	µg/L	10	<10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	<10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	<10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	<10	U
64	Carbazole	86-74-8	µg/L	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	43
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	46
4	Phenol-d5	4165-62-2	10- 93	48
5	Terphenyl-d14	1718-51-0	33-140	58
6	2,4,6-Tribromophenol	118-79-6	10-122	36
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	109
2	Chrysene-d12	1719-03-5	50-200	104
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
4	Naphthalene-d8	1146-65-2	50-200	107
5	Perylene-d12	1520-96-3	50-200	108
6	Phenanthrene-d10	1517-22-2	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Oil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0**
98SY-M4Fa-L-0.5
98SY-M5Fa-S-0**
98SY-M5Fb-S-0
98SY-M5Fc-S-0
98SY-M5Fd-S-0
98SY-M5Fe-S-0
98SY-RE2e-W-10
98SY-T05a-S-1
98SY-T05a-W-7**
98SY-T07b-S-5**
98SY-T07c-S-5
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T10e-S-5MS
98SY-T10e-S-5DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 14 soil samples, one oil sample, and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Barium Beryllium Cobalt Copper Thallium Molybdenum	0.9 ug/L 0.2 ug/L 0.5 ug/L 2.9 ug/L 1.9 ug/L 1.3 ug/L	All samples in SDG 98-3466
CCB1	Antimony Barium Copper Zinc Molybdenum	2.4 ug/L 1.1 ug/L -0.8 ug/L 7.1 ug/L 0.8 ug/L	All samples in SDG 98-3466
CCB2	Barium Copper Zinc Molybdenum	0.9 ug/L 2.5 ug/L 1.8 ug/L 0.9 ug/L	All samples in SDG 98-3466
CCB3	Copper Thallium Vanadium Zinc Molybdenum	-0.8 ug/L 1.7 ug/L 1.1 ug/L 1.6 ug/L 1.3 ug/L	All samples in SDG 98-3466
PB (prep blank)	Antimony Arsenic Copper Selenium Zinc	0.123 mg/Kg -0.062 mg/Kg -0.127 mg/Kg 0.075 mg/Kg 0.211 mg/Kg	All soil samples in SDG 98-3466

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Antimony Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Vanadium Zinc Molybdenum	2.7 ug/L 4.9 ug/L 0.7 ug/L 0.8 ug/L 1.9 ug/L 2.0 ug/L 3.4 ug/L 1.9 ug/L 0.7 ug/L 1.4 ug/L 2.4 ug/L 3.4 ug/L	All samples in SDG 98-3466
CCB1	Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Silver Thallium Vanadium Zinc Molybdenum	5.3 ug/L 0.6 ug/L 0.8 ug/L 2.5 ug/L 1.9 ug/L 3.6 ug/L 1.0 ug/L 1.9 ug/L 1.0 ug/L 3.0 ug/L 1.6 ug/L 2.0 ug/L 4.0 ug/L	All samples in SDG 98-3466
CCB2	Barium Beryllium Cadmium Cobalt Copper Nickel Thallium Molybdenum	1.6 ug/L 0.2 ug/L 0.3 ug/L 0.6 ug/L 2.1 ug/L 0.7 ug/L 1.5 ug/L 2.0 ug/L	All samples in SDG 98-3466
CCB3	Barium Beryllium Cadmium Cobalt Copper Nickel Molybdenum	1.7 ug/L 0.3 ug/L 0.3 ug/L 0.6 ug/L 1.5 ug/L 0.6 ug/L 1.1 ug/L	All samples in SDG 98-3466
PB (prep blank)	Copper	1.286 ug/L	All water samples in SDG 98-3466
CCB1	Copper Thallium Zinc Molybdenum	-1.0 ug/L 2.2 ug/L 1.4 ug/L 1.1 ug/L	All samples in SDG 98-3466

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with

the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
98SY-M4Fa-L-0.5	Antimony Barium Cadmium Cobalt Molybdenum	0.10 mg/Kg 0.62 mg/Kg 0.15 mg/Kg 0.15 mg/Kg 0.090 mg/Kg	0.10U mg/Kg 0.62U mg/Kg 0.15U mg/Kg 0.15U mg/Kg 0.090U mg/Kg
98SY-RE2e-W-10	Barium Chromium Copper Nickel Zinc	1.4 ug/L 2.1 ug/L 2.4 ug/L 3.4 ug/L 6.0 ug/L	1.4U ug/L 2.1U ug/L 2.4U ug/L 3.4U ug/L 6.0U ug/L
98SY-T05a-S-1	Selenium Silver Molybdenum	0.18 mg/Kg 0.16 mg/Kg 0.26 mg/Kg	0.18U mg/Kg 0.16U mg/Kg 0.26U mg/Kg
98SY-T05a-W-7**	Chromium Nickel Thallium Vanadium Molybdenum	3.4 ug/L 1.8 ug/L 2.0 ug/L 0.58 ug/L 8.5 ug/L	3.4U ug/L 1.8U ug/L 2.0U ug/L 0.58U ug/L 8.5U ug/L
98SY-T07b-S-5**	Cadmium Selenium Molybdenum	0.038 mg/Kg 0.088 mg/Kg 0.22 mg/Kg	0.038U mg/Kg 0.088U mg/Kg 0.22U mg/Kg
98SY-T07c-S-5	Cadmium Silver Molybdenum	0.021 mg/Kg 0.24 mg/Kg 0.18 mg/Kg	0.021U mg/Kg 0.24U mg/Kg 0.18U mg/Kg
98SY-T10c-S-5	Cadmium Silver Molybdenum	0.0078 mg/Kg 0.06 mg/Kg 0.13 mg/Kg	0.0078U mg/Kg 0.06U mg/Kg 0.13U mg/Kg
98SY-T10c-W-10	Chromium Cobalt Copper Lead Nickel Vanadium Zinc Molybdenum	1.4 ug/L 2.7 ug/L 4.1 ug/L 1.6 ug/L 3.9 ug/L 0.45 ug/L 4.9 ug/L 15.9 ug/L	1.4U ug/L 2.7U ug/L 4.1U ug/L 1.6U ug/L 3.9U ug/L 0.45U ug/L 4.9U ug/L 15.9U ug/L
98SY-T10e-S-5	Cadmium Silver Molybdenum	0.026 mg/Kg 0.077 mg/Kg 0.39 mg/Kg	0.026U mg/Kg 0.077U mg/Kg 0.39U mg/Kg

Sample 98SY-RE2e-W-10 was identified as an equipment rinsate. No metal contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Analyte	Concentration (ug/L)
98SY-RE2e-W-10	Barium	1.4
	Chromium	2.1
	Copper	2.4
	Nickel	3.4
	Zinc	6.0

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
98SY-T10e-S-5L	Nickel	11.9 (≤10)	All soil and oil samples in SDG 98-3466	J (all detects)	A

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 98SY-M5Fc-S-0 and 98SY-M5Fe-S-0 and samples 98SY-T10c-S-5 and 98SY-T10e-S-5 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M5Fc-S-0	98SY-M5Fe-S-0			
Antimony	23.9	31.1	26.2 (≤35)	-	-
Arsenic	22.3	22.1	0.9 (≤35)	-	-
Barium	105	128	20 (≤35)	-	-
Cadmium	3.1	2.7	14 (≤35)	-	-
Chromium	1710	1680	2 (≤35)	-	-
Cobalt	71.7	62.2	14 (≤35)	-	-
Copper	5000	10300	69 (≤35)	J	A
Lead	2410	2230	8 (≤35)	-	-
Mercury	0.5	0.31	47 (≤35)	J	A
Nickel	7810	11200	36 (≤35)	J	A
Selenium	2.4	4.5	61 (≤35)	J	A
Silver	4.8	5.4	12 (≤35)	-	-
Thallium	1.5U	2.2	200 (≤35)	J	A

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M5Fc-S-0	98SY-M5Fe-S-0			
Vanadium	40.7	48.3	17 (≤35)	-	-
Zinc	785	789	0.5 (≤35)	-	-
Molybdenum	388	376	3 (≤35)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-T10c-S-5	98SY-T10e-S-5			
Arsenic	2.5	3.9	44 (≤35)	J	A
Barium	42.4	74.5	55 (≤35)	J	A
Cadmium	0.0078	0.026	108 (≤35)	J	A
Chromium	15.9	13.2	19 (≤35)	-	-
Cobalt	4.9	6.8	33 (≤35)	-	-
Copper	7.0	12.5	56 (≤35)	J	A
Lead	2.3	3.8	49 (≤35)	J	A
Mercury	0.17	0.33	64 (≤35)	J	A
Nickel	10.5	10.6	0.9 (≤35)	-	-
Selenium	0.08U	0.53	200 (≤35)	J	A
Silver	0.060	0.077	25 (≤35)	-	-
Vanadium	17.0	27.5	47 (≤35)	J	A
Zinc	27.5	35.7	26 (≤35)	-	-
Molybdenum	0.13	0.39	100 (≤35)	J	A

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 98-3466

SDG	Sample	Analyte	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0** 98SY-M4Fa-L-0.5 98SY-M5Fa-S-0** 98SY-M5Fb-S-0 98SY-M5Fc-S-0 98SY-M5Fd-S-0 98SY-M5Fe-S-0 98SY-T05a-S-1 98SY-T07b-S-5** 98SY-T07c-S-5 98SY-T10c-S-5 98SY-T10d-S-0 98SY-T10e-S-5	Nickel	J (all detects)	A	ICP serial dilution (%D)
98-3466	98SY-M5Fc-S-0 98SY-M5Fe-S-0	Copper Mercury Nickel Selenium Thallium	J J J J J	A	Field duplicates (RPD)
98-3466	98SY-T10c-S-5 98SY-T10e-S-5	Arsenic Barium Cadmium Copper Lead Mercury Selenium Vanadium Molybdenum	J J J J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 98-3466

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3466	98SY-M4Fa-L-0.5	Antimony Barium Cadmium Cobalt Molybdenum	0.10U mg/Kg 0.62U mg/Kg 0.15U mg/Kg 0.15U mg/Kg 0.090U mg/Kg	A
98-3466	98SY-RE2e-W-10	Barium Chromium Copper Nickel Zinc	1.4U ug/L 2.1U ug/L 2.4U ug/L 3.4U ug/L 6.0U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
98-3466	98SY-T05a-S-1	Selenium Silver Molybdenum	0.18U mg/Kg 0.16U mg/Kg 0.26U mg/Kg	A
98-3466	98SY-T05a-W-7**	Chromium Nickel Thallium Vanadium Molybdenum	3.4U ug/L 1.8U ug/L 2.0U ug/L 0.58U ug/L 8.5U ug/L	A
98-3466	98SY-T07b-S-5**	Cadmium Selenium Molybdenum	0.038U mg/Kg 0.088U mg/Kg 0.22U mg/Kg	A
98-3466	98SY-T07c-S-5	Cadmium Silver Molybdenum	0.021U mg/Kg 0.24U mg/Kg 0.18U mg/Kg	A
98-3466	98SY-T10c-S-5	Cadmium Silver Molybdenum	0.0078U mg/Kg 0.06U mg/Kg 0.13U mg/Kg	A
98-3466	98SY-T10c-W-10	Chromium Cobalt Copper Lead Nickel Vanadium Zinc Molybdenum	1.4U ug/L 2.7U ug/L 4.1U ug/L 1.6U ug/L 3.9U ug/L 0.45U ug/L 4.9U ug/L 15.9U ug/L	A
98-3466	98SY-T10e-S-5	Cadmium Silver Molybdenum	0.026U mg/Kg 0.077U mg/Kg 0.39U mg/Kg	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Sample ID: 98SY-M1PA-S-0
Sample Type: Field Sample

Project No: 6210-014
Service ID: 983466
Lab Sample ID: 98-3466-2
Sample Matrix Soil

Collection Date: 06/17/98
Collected by:
Received Date: 06/17/98
Moisture %: 3.8

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	71.0	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.2	18.0		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	21	142		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.2	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.2	4.5		P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	5890		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	80.7		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	20000		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.2	141		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.12	B	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.2	537		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.2	9170		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	2.5	B	P		98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	9.2	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	<1.6	U	P		98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	53.7		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	1590		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-3	Received Date:	06/17/98
Sample ID:	**98SY-M4FA-L-0.5**	Sample Matrix	Oil	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5	0.10	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.3	< 0.055	U	P		98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1	0.62	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.2	< 0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.2	0.15	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.5	1.1		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.5	0.15	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.5	143		P		98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.2	13.1		P		98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.2	< 0.22	U	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.2	0.090	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.3	0.81		P	J E	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.5	< 0.075	U	P		98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.5	< 0.053	U	P		98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5	< 0.075	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.5	< 0.046	U	P		98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.5	48.5		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-4	Received Date:	06/17/98
Sample ID:	98SY-M5FA-S-0	Sample Matrix	Soil	Moisture %:	2.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	45.3	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.1	22.9		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	272		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.1	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.1	9.7		P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	3130		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	62.6		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	4450		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.1	1390		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.35		CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.1	336		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.1	5060		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	<1.5	U	P		98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	6.9	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	1.9	B	P		98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	77.9		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	1770		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-5	Received Date:	06/17/98
Sample ID:	98SY-M5FB-S-0	Sample Matrix	Soil	Moisture %:	0.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	30.1	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.0	27.7		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	108		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.0	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.0	3.7	B	P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	2070		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	83.3		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	8020		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.0	774		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.2	B	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.0	404		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.0	11200		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	2.5	B	P		98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	5.8	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	3.4	B	P		98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	43.2		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	1040		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Sample ID: 98SY-M5FC-S-0
Sample Type: Field Sample

Project No: 6210-014
Service ID: 983466
Lab Sample ID: 98-3466-6
Sample Matrix Soil

Collection Date: 06/17/98
Collected by:
Received Date: 06/17/98
Moisture %: 0.6

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	23.9	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.0	22.3		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	105		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.0	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.0	3.1	B	P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	1710		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	71.7		P	J	98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	5000		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.0	2410		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.5		CV	J	98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.0	388		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.0	7810		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	2.4	B	P	J	98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	4.8	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	<1.5	~~U~~	P	W	98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	40.7		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	785		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-7	Received Date:	06/17/98
Sample ID:	**98SY-M5FD-S-0**	Sample Matrix	Soil	Moisture %:	0.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	31.7	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.0	30.4		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	166		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.0	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.0	5.4		P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	1830		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	82.8		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	9070		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.0	1320		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.83		CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.0	395		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.0	7970		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	2.2	B	P		98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	8.0	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	2.3	B	P		98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	57.0		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	1470		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

a9698

722616

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Sample ID: **98SY-M5FE-S-0**
Sample Type: Field Sample

Project No: 6210-014
Service ID: 983466
Lab Sample ID: 98-3466-8
Sample Matrix Soil

Collection Date: 06/17/98
Collected by:
Received Date: 06/17/98
Moisture %: 0.6

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	31.1	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.0	22.1		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	128		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.0	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.0	2.7	B	P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	1680		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	62.2		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	10300		P	J	98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.0	2230		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.31		CV	J	98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.0	376		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.0	11200		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	4.5	~~B~~	P	J	98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	5.4	B	P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	2.2	~~B~~	P	J	98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	48.3		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	789		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

µg/kg

C022617

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983466
Lab Sample ID: 98-3466-9

Collection Date: 06/17/98
Collected by:
Received Date: 06/17/98

Sample ID: **98SY-RE2E-W-10**
Sample Type: Field Sample

Sample Matrix Water
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	<1.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	1.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	2.1	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	<0.46	U	P		98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	2.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	<0.89	U	P		98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1640D	06/23/98	06/23/98	1	7470
Molybdenum	7439-98-7	µg/L	5	<0.71	U	P		98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	3.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	<2.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	<1.5	U	P		98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	<0.42	U	P		98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	6.0		P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/6/98

022618

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-11	Received Date:	06/17/98
Sample ID:	98SY-T05A-S-1	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	<0.10	U	P		98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	3.9		P		98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	118		P		98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	<0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	10		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	8.4		P		98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.53	22.2		P		98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	4.8		P		98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.045	B	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.21	0.26		P	U	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	9.1		P	J E	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	0.18	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.53	0.16	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	<0.079	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	27.1		P		98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	44.8		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

14698

022619

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-12	Received Date:	06/17/98
Sample ID:	98SY-T05A-W-7	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	8.8		P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	61.6		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	1	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	3.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	<0.46	U	P		98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	8.9	B	P		98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	<0.89	U	P		98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1640D	06/23/98	06/23/98	1	7470
Molybdenum	7439-98-7	µg/L	5	8.5		P	U	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	1.8	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	4.1	B	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	2.0	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	0.58	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	<0.9	U	P		98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

N a6/98

C022620

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-13	Received Date:	06/17/98
Sample ID:	98SY-T07B-S-5	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	< 0.10	U	P		98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	2.7		P		98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	52.7		P		98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	< 0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	0.038	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.54	10.5		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.54	5.7		P		98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.54	10.3		P		98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.22	7.3		P		98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.054	B	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.22	0.22	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	9.2		P	J E	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.54	0.088	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.54	< 0.057	U	P		98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.4	< 0.081	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.54	21.0		P		98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.54	29.2		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

mg/kg

022621

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-14	Received Date:	06/17/98
Sample ID:	98SY-T07C-S-5	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	<0.098	U	P		98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.2		P		98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.0	30.8		P		98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.021	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.52	13.6		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.52	2.6		P		98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.52	3.9		P		98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.2		P		98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.034	B	CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.21	0.18	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.31	8.1		P	J E	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.52	<0.078	U	P		98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.52	0.24	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.2	<0.078	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.52	11.3		P		98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.52	15.5		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/16/98

022622

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	< 0.10	U	P		98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	2.5		P	J	98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	42.4		P	J	98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.0078	B	P	UJ	98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	15.9		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	4.9		P		98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.53	7.0		P	J	98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	2.3		P	J	98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.17	B	CV	J	98M1641D	06/23/98	06/24/98	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	0.13	B	P	UJ	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	10.5		P	JE	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	< 0.080	U	P	W	98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.53	0.060	B	P	U	98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	< 0.080	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	17.0		P	J	98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	27.5		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/16/98

022623

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	98SY-T10C-W-10	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<2.1	U	P		98M1627L	06/22/98	06/22/98	1	6010
Arsenic	7440-38-2	µg/L	5	1.7	B	P		98M1627L	06/22/98	06/22/98	1	6010
Barium	7440-39-3	µg/L	10	55.5		P		98M1627L	06/22/98	06/22/98	1	6010
Beryllium	7440-41-7	µg/L	2	<0.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Cadmium	7440-43-9	µg/L	2	<0.19	U	P		98M1627L	06/22/98	06/22/98	1	6010
Chromium	7440-47-3	µg/L	5	1.4	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Cobalt	7440-48-4	µg/L	5	2.7	~~B~~	P		98M1627L	06/22/98	06/22/98	1	6010
Copper	7440-50-8	µg/L	10	4.1	~~B~~	P		98M1627L	06/22/98	06/22/98	1	6010
Lead	7439-92-1	µg/L	5	1.6	~~B~~	P		98M1627L	06/22/98	06/22/98	1	6010
Mercury	7439-97-6	µg/L	0.5	1.8		CV		98M1640D	06/23/98	06/23/98	1	7470
Molybdenum	7439-98-7	µg/L	5	15.9		P	U	98M1627L	06/22/98	06/22/98	1	6010
Nickel	7440-02-0	µg/L	5	3.9	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Selenium	7782-49-2	µg/L	10	<2.2	U	P		98M1627L	06/22/98	06/22/98	1	6010
Silver	7440-22-4	µg/L	10	<0.26	U	P		98M1627L	06/22/98	06/22/98	1	6010
Thallium	7440-28-0	µg/L	10	<1.5	U	P		98M1627L	06/22/98	06/22/98	1	6010
Vanadium	7440-62-2	µg/L	10	0.45	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010
Zinc	7440-66-6	µg/L	5	4.9	~~B~~	P	U	98M1627L	06/22/98	06/22/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	98SY-T10D-S-0	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	100	56.9	B	P		98M1637M	06/23/98	06/23/98	20	6010
Arsenic	7440-38-2	mg/kg	6.1	21.6		P		98M1637M	06/23/98	06/23/98	20	6010
Barium	7440-39-3	mg/kg	20	318		P		98M1637M	06/23/98	06/23/98	20	6010
Beryllium	7440-41-7	mg/kg	4.1	<0.1	U	P		98M1637M	06/23/98	06/23/98	20	6010
Cadmium	7440-43-9	mg/kg	4.1	11.7		P		98M1637M	06/23/98	06/23/98	20	6010
Chromium	7440-47-3	mg/kg	10	3660		P		98M1637M	06/23/98	06/23/98	20	6010
Cobalt	7440-48-4	mg/kg	10	79.6		P		98M1637M	06/23/98	06/23/98	20	6010
Copper	7440-50-8	mg/kg	10	7090		P		98M1637M	06/23/98	06/23/98	20	6010
Lead	7439-92-1	mg/kg	4.1	2290		P		98M1637M	06/23/98	06/23/98	20	6010
Mercury	7439-97-6	mg/kg	0.2	0.67		CV		98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	4.1	407		P		98M1637M	06/23/98	06/23/98	20	6010
Nickel	7440-02-0	mg/kg	6.1	7970		P	J E	98M1637M	06/23/98	06/23/98	20	6010
Selenium	7782-49-2	mg/kg	10	3.8	B	P		98M1637M	06/23/98	06/23/98	20	6010
Silver	7440-22-4	mg/kg	10	11.2		P		98M1637M	06/23/98	06/23/98	20	6010
Thallium	7440-28-0	mg/kg	100	2.5	B	P		98M1637M	06/23/98	06/23/98	20	6010
Vanadium	7440-62-2	mg/kg	10	69.2		P		98M1637M	06/23/98	06/23/98	20	6010
Zinc	7440-66-6	mg/kg	10	1700		P		98M1637M	06/23/98	06/23/98	20	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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022625

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	**98SY-T10E-S-5**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	<0.10	U	P		98M1637M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	3.9		P	J	98M1637M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	74.5		P	J	98M1637M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1637M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.026	~~B~~	P	UJ	98M1637M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	13.2		P		98M1637M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	6.8		P		98M1637M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.53	12.5		P	J	98M1637M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	3.8		P	J	98M1637M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.33		CV	J	98M1641D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.21	0.39		P	UJ	98M1637M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	10.6		P	E	98M1637M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	0.53		P	J	98M1637M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.53	0.077	~~B~~	P	U	98M1637M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	<0.079	U	P		98M1637M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	27.5		P	J	98M1637M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	35.7		P		98M1637M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

7/6/98

022626

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: October 14, 1998

Matrix: Soil/Oil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0
98SY-M4Fa-L-0.5
98SY-RE2e-W-10
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T10e-W-10
98SY-M1Pa-S-0MS
98SY-M1Pa-S-0MSD

Introduction

This data review covers 6 soil samples, one oil sample, and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample 98SY-RE2e-W-10 was identified as an equipment rinsate. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits. *In the case where surrogates were outside QC limits due to dilutions of samples, data was not qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for the soil samples with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M4Fa-L-0.5	All TCL compounds	No MS/MSD associated with this sample.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M1Pa-S-0MS/MSD (98SY-M1Pa-S-0 98SY-T10c-S-5 98SY-T10d-S-0 98SY-T10e-S-5)	Aroclor-1016 Aroclor-1260	- 202 (30-129)	- -	60 (≤37) 68 (≤37)	J J	A

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate for the water samples.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M4Fa-L-0.5 98G2886-MB-01	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	J	P

The samples and associated blanks are qualified as estimated (J) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 98SY-T10c-S-5 and 98SY-T10e-S-5 and samples 98SY-T10c-W-10 and 98SY-T10e-W-10 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3466

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M4Fa-L-0.5	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
98-3466	98SY-M1Pa-S-0 98SY-T10c-S-5 98SY-T10d-S-0 98SY-T10e-S-5	Aroclor-1016 Aroclor-1260	J J	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
98-3466	98SY-M4Fa-L-0.5	All TCL compounds	J	P	Laboratory control samples

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-2	Received Date:	06/17/98
Sample ID:	**98SY-M1PA-S-0**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	05:24
Data File Name:	3466.002	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	520	< 520	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1000	< 1000	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	520	< 520	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	520	< 520	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	520	< 520	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	260	< 260	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	260	< 260	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	137
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

1,2,9,9,8

021947

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-3	Received Date:	06/17/98
Sample ID:	**98SY-M4FA-L-0.5**	Sample Matrix	Oil	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: T
Anal. Method:	8082	Prep. Date:	06/29/98	Anal. Date:	07/06/98
Batch No:	98G2886	Prep. No:	1 of 1	Anal. Time:	22:48
Data File Name:	3466.003	Sample Amount:	0.10 g	Dilution Factor:	2
Extract Vol.	10. mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	mg/kg	10	< 10	U UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	mg/kg	10	< 10	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	mg/kg	10	< 10	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	mg/kg	4	< 4	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	mg/kg	4	< 4	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	mg/kg	2	< 2	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	mg/kg	2	< 2	U

Surrogates			Control Limit. %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	12
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	45
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-9	Received Date:	06/17/98
Sample ID:	**98SY-RE2E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2811	Prep. No:	1 of 1	Anal. Time:	22:09
Data File Name:	3466.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	< 2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	< 5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	< 2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	< 2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	< 2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	< 1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	< 1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	63
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	04:07
Data File Name:	3466.015	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	53	< 53	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	< 110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	53	< 53	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	53	< 53	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	53	< 53	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	< 27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	< 27	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	81
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	**98SY-T10C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2811	Prep. No:	1 of 1	Anal. Time:	22:35
Data File Name:	3466.016	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	85
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	**98SY-T10D-S-0**	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	05:49
Data File Name:	3466.017	Sample Amount:	30.0 g	Dilution Factor:	5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	250	< 250	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	510	< 510	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	250	< 250	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	250	< 250	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	250	< 250	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	130	< 130	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	130	1400	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	213
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	127
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	**98SY-T10E-S-5**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	04:33
Data File Name:	3466.018	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	53	< 53	U UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	< 110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	53	< 53	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	53	< 53	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	53	< 53	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	< 26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	< 26	U UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	84
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-19	Received Date:	06/17/98
Sample ID:	**98SY-T10E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2811	Prep. No:	1 of 1	Anal. Time:	23:00
Data File Name:	3466.019	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-145	81
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	34-144	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Wipe

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3467

Sample Identification

98SY-BF1b-P-0
98SY-PL1a-P-0**
98SY-PL2a-P-0
98SY-PL2c-P-0

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 4 wipe samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample 98SY-BF1b-P-0 was identified as a field blank. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
98SY-PL1a-P-0**	DB-608	Decachlorobiphenyl	162 (30-137)	All TCL compounds	J (all detects)	A
98SY-PL2a-P-0	DB-608	Decachlorobiphenyl	264 (30-137)	All TCL compounds	J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike and matrix spike duplicate analysis was not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 98SY-PL2a-P-0 and 98SY-PL2c-P-0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3467

SDG	Sample	Compound	Flag	A or P	Reason
98-3467	98SY-PL1a-P-0** 98SY-PL2a-P-0	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3467

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3467

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983467	Collected by:	
		Lab Sample ID:	98-3467-1	Received Date:	06/17/98
Sample ID:	**98SY-BF1B-P-0**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	07/01/98	Anal. Date:	07/11/98
Batch No:	98G2906	Prep. No:	1 of 1	Anal. Time:	04:07
Data File Name:	3467.201	Sample Amount:	1 wipe	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	<0.75	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	132
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983467	Collected by:	
		Lab Sample ID:	98-3467-2	Received Date:	06/17/98
Sample ID:	98SY-PL1A-P-0	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	07/01/98	Anal. Date:	07/11/98
Batch No:	98G2906	Prep. No:	1 of 1	Anal. Time:	04:32
Data File Name:	3467.202	Sample Amount:	1 wipe	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	< 1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	< 3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	< 1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	< 1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	< 1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	< 0.75	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	< 0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	162
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	122
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983467	Collected by:	
		Lab Sample ID:	98-3467-3	Received Date:	06/17/98
Sample ID:	**98SY-PL2A-P-0**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	07/01/98	Anal. Date:	07/11/98
Batch No:	98G2906	Prep. No:	1 of 1	Anal. Time:	04:57
Data File Name:	3467.203	Sample Amount:	1 wipe	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	<0.75	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	264
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	139
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

µg998

023414

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard	Service ID:	983467	Collected by:	
		Lab Sample ID:	98-3467-4	Received Date:	06/17/98
Sample ID:	98SY-PL2C-P-0	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	07/01/98	Anal. Date:	07/11/98
Batch No:	98G2906	Prep. No:	1 of 1	Anal. Time:	05:22
Data File Name:	3467.204	Sample Amount:	1 wipe	Dilution Factor:	1
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	<0.75	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	101
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

u998

23417

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0
98SY-RE2e-W-10
98SY-RE2f-W-10
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T10e-W-10
98SY-RE2e-W-10MS
98SY-RE2e-W-10MSD
98SY-T10c-S-5MS
98SY-T10c-S-5MSD

Introduction

This data review covers 6 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Samples 98SY-RE2e-W-10 and 98SY-RE2f-W-10 were identified as equipment rinsates. No total petroleum hydrocarbons as gasoline contaminants were found in these blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M1Pa-S-0 98SY-RE2f-W-10 98SY-T10c-W-10 98SY-T10e-W-10	TPH as gasoline	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-T10c-S-5 and 98SY-T10e-S-5 and samples 98SY-T10c-W-10 and 98SY-T10e-W-10 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-T10c-S-5	98SY-T10e-S-5			
TPH as gasoline	0.05	0.04	22 (≤35)	-	-

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 98-3466

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0 98SY-RE2f-W-10 98SY-T10c-W-10 98SY-T10e-W-10	TPH as gasoline	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-2	Received Date:	06/17/98
Sample ID:	**98SY-M1PA-S-0**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	06/22/98	Anal. Date:	06/22/98
Batch No:	98G2777	Prep. No:	-	Anal. Time:	22:53
Data File Name:	3466.102	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	0.09	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	87
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/9/98

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-9	Received Date:	06/17/98
Sample ID:	**98SY-RE2E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/24/98	Anal. Date:	06/24/98
Batch No:	98G2776	Prep. No:	-	Anal. Time:	03:57
Data File Name:	3466.009	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-10	Received Date:	06/17/98
Sample ID:	**98SY-RE2F-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2820	Prep. No:	-	Anal. Time:	09:25
Data File Name:	3466.010	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2755	Prep. No:	-	Anal. Time:	12:45
Data File Name:	3466.015	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.05	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	101
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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022314

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	**98SY-T10C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2820	Prep. No:	-	Anal. Time:	11:01
Data File Name:	3466.016	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/9/98

022316

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	**98SY-T10D-S-0**	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2755	Prep. No:	-	Anal. Time:	13:09
Data File Name:	3466.017	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	0.04	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	77
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

94498

22318

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	98SY-T10E-S-5	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/20/98	Anal. Date:	06/20/98
Batch No:	98G2755	Prep. No:	-	Anal. Time:	13:33
Data File Name:	3466.018	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.04	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	83
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

uq49r

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-19	Received Date:	06/17/98
Sample ID:	**98SY-T10E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/25/98	Anal. Date:	06/25/98
Batch No:	98G2820	Prep. No:	-	Anal. Time:	11:24
Data File Name:	3466.019	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-123	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

19498

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Oil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0
98SY-M4Fa-L-0.5
98SY-RE2e-W-10
98SY-RE2f-W-10
98SY-T10c-S-5
98SY-T10c-W-10
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T10e-W-10

Introduction

This data review covers 4 soil samples, one oil sample, and 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Samples 98SY-RE2e-W-10 and 98SY-RE2f-W-10 were identified as equipment rinsates. No total petroleum hydrocarbons as extractable contaminants were found in these blanks with the following exceptions:

Equipment Rinsate ID	Compound	Concentration (mg/L)
98SY-RE2f-W-10	TPH as diesel	0.04

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M4Fa-L-0.5	TPH as extractables	No MS/MSD associated with this sample.	MS/MSD required.	None	P

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate for the water samples.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-T10c-S-5 and 98SY-T10e-S-5 and samples 98SY-T10c-W-10 and 98SY-T10e-W-10 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-T10c-S-5	98SY-T10e-S-5			
TPH as diesel	11U	3	200 (≤35)	J	A
TPH as motor oil	11U	46	200 (≤35)	J	A

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	98SY-T10c-W-10	98SY-T10e-W-10			
TPH as motor oil	0.06	0.1	50 (≤20)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 98-3466

SDG	Sample	Compound	Flag	A or P	Reason
98-3466	98SY-M4Fa-L-0.5	TPH as extractables	None	P	Matrix spike/Matrix spike duplicates
98-3466	98SY-T10c-S-5 98SY-T10e-S-5	TPH as diesel TPH as motor oil	J J	A	Field duplicates (RPD)
98-3466	98SY-T10c-W-10 98SY-T10e-W-10	TPH as motor oil	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-2	Received Date:	06/17/98
Sample ID:	**98SY-M1PA-S-0**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	19:53
Data File Name:	3466.002	Sample Amount:	20.0 g	Dilution Factor:	5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	52	75	
2	Motor oil		mg/kg	52	420	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane. C_{28}	630-02-4	50-145	531
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/9/98

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-3	Received Date:	06/17/98
Sample ID:	**98SY-M4FA-L-0.5**	Sample Matrix	Oil	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2847	Prep. No:	1 of 1	Anal. Time:	07:50
Data File Name:	3466.003	Sample Amount:	0.10 g	Dilution Factor:	10000
Extract Vol.	10. mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	100000	<100000	U
2	Motor oil		mg/kg	100000	1000000	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-145	464000	
# of out-of-control					1	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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022448

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-9	Received Date:	06/17/98
Sample ID:	**98SY-RE2E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	21:46
Data File Name:	3466.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	60
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-10	Received Date:	06/17/98
Sample ID:	**98SY-RE2F-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/26/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	23:01
Data File Name:	3466.010	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.04 -	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-15	Received Date:	06/17/98
Sample ID:	**98SY-T10C-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/28/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	18:13
Data File Name:	3466.015	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	~~U~~ UJ
2	Motor oil		mg/kg	11	<11	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-16	Received Date:	06/17/98
Sample ID:	**98SY-T10C-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/27/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	00:41
Data File Name:	3466.016	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	0.06	~~J~~ U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-17	Received Date:	06/17/98
Sample ID:	**98SY-T10D-S-0**	Sample Matrix	Soil	Moisture %:	1.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	13:09
Data File Name:	3466.117	Sample Amount:	20.0 g	Dilution Factor:	100
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	1000	5600	
2	Motor oil		mg/kg	1000	12000	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	11900
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-18	Received Date:	06/17/98
Sample ID:	**98SY-T10E-S-5**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	15:40
Data File Name:	3466.118	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	3 -	~~J~~ J
2	Motor oil		mg/kg	11	46	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	90
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/9/98

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/17/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983466	Collected by:	
		Lab Sample ID:	98-3466-19	Received Date:	06/17/98
Sample ID:	**98SY-T10E-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/23/98	Anal. Date:	06/27/98
Batch No:	98G2803	Prep. No:	1 of 1	Anal. Time:	01:06
Data File Name:	3466.019	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	0.1	J ~~J~~

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	54-143	119
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

u9498

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Oil/Water

Parameters: Cyanide

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M4Fa-L-0.5**
98SY-RE2e-W-10
98SY-T05a-S-1**
98SY-T05a-W-7
98SY-T05a-W-7MS
98SY-T05a-W-7MSD
98SY-T05a-W-7DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers one soil sample, one oil sample, and 5 water samples listed on the cover sheet. The analyses were per EPA Method 335.2 for Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide contaminants were found in the method blanks.

Sample 98SY-RE2e-W-10 was identified as an equipment rinsate. No cyanide contaminants were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Cyanide - Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 335.2
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983466 Collected by:

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3466-3	98SY-M4FA-L-0.5	Oil	06/17/98	06/17/98	06/25/98	98W3729	mg/kg	2.5	<2.5	U
98-3466-9	98SY-RE2E-W-10	Water	06/17/98	06/17/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98-3466-11	98SY-T05A-S-1	Soil	06/17/98	06/17/98	06/25/98	98W3729	mg/kg	2.6	<2.6	U
98-3466-12	98SY-T05A-W-7	Water	06/17/98	06/17/98	06/22/98	98W3665	mg/L	0.05	<0.05	U
98W3729-MB-01		Soil	06/25/98	06/25/98	06/25/98	98W3729	mg/kg	2.5	<2.5	U
98W3665-MB-01		Water	06/22/98	06/22/98	06/22/98	98W3665	mg/L	0.05	<0.05	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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023012

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: September 2, 1998

Matrix: Soil/Water

Parameters: Hexavalent Chromium

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-RE2e-W-10
98SY-T05a-S-1
98SY-T05a-W-7
98SY-RE2e-W-10MS
98SY-RE2e-W-10MSD
98SY-RE2e-W-10DUP
98SY-T05a-S-1MS
98SY-T05a-S-1MSD
98SY-T05a-S-1DUP

ND

Introduction

This data review covers 4 soil samples and 5 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium contaminants were found in the method blanks.

Sample 98SY-RE2e-W-10 was identified as an equipment rinsate. No hexavalent chromium contaminants were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

Raw data were not reviewed for this SDG.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Hexavalent Chromium - Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 7196

29.

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 7196
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983466 Collected by:

Component Name: Chromium (VI)
CAS No: 1333-82-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3466-9	98SY-RE2E-W-10	Water	06/17/98	06/17/98	06/18/98	98W3569	mg/L	0.01	<0.01	U
98-3466-11	98SY-T05A-S-1	Soil	06/17/98	06/17/98	06/22/98	98W3664	mg/kg	0.11	<0.11	U
98-3466-12	98SY-T05A-W-7	Water	06/17/98	06/17/98	06/18/98	98W3569	mg/L	0.01	<0.01	U
98W3569-MB-01		Water	06/18/98	06/18/98	06/18/98	98W3569	mg/L	0.01	<0.01	U
98W3664-MB-01		Soil	06/22/98	06/22/98	06/22/98	98W3664	mg/kg	0.1	<0.1	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

NQ498

123014

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 17, 1998

LDC Report Date: October 14, 1998

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3466

Sample Identification

98SY-M1Pa-S-0
98SY-RE2e-W-10
98SY-T05a-S-1
98SY-T05a-W-7
98SY-T07b-S-5
98SY-T07c-S-5**
98SY-T10c-S-5
98SY-T10d-S-0
98SY-T10e-S-5
98SY-T05a-W-7DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 soil samples and 3 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

Sample *98SY-RE2e-W-10 blank is listed as follows:

Equipment Rinsate ID	Analyte	Concentration (units)
*98SY-RE2e-W-10	pH	7.05

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 98-3466	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-T07c-S-5** and 98SY-T10e-S-5 were identified as field duplicates. The results are listed as follows:

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-T07c-S-5**	98SY-T10e-S-5			
pH	7.65	8.12	6 (≤35)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 98-3466

SDG	Sample	Analyte	Flag	A or P	Reason
98-3466	98SY-M1Pa-S-0 98SY-RE2e-W-10 98SY-T05a-S-1 98SY-T05a-W-7 98SY-T07b-S-5 98SY-T07c-S-5** 98SY-T10c-S-5 98SY-T10d-S-0 98SY-T10e-S-5	pH	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 98-3466

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: Long Beach Naval Shipyard AOCs Service ID: 983466 Collected by:

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3466-2	98SY-M1PA-S-0	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	7.99	
98-3466-9	98SY-RE2E-W-10	Water	06/17/98	06/17/98	06/18/98	98W3568	pH unit	0.01	7.05	
98-3466-11	98SY-T05A-S-1	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	8.10	
98-3466-12	98SY-T05A-W-7	Water	06/17/98	06/17/98	06/18/98	98W3568	pH unit	0.01	7.37	
98-3466-13	98SY-T07B-S-5	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	7.73	
98-3466-14	98SY-T07C-S-5	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	7.65	
98-3466-15	98SY-T10C-S-5	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	8.02	
98-3466-17	98SY-T10D-S-0	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	8.15	
98-3466-18	98SY-T10E-S-5	Soil	06/17/98	06/17/98	06/20/98	98W3654	pH unit	0.01	8.12	
98W3654-MB-01		Soil	06/20/98	06/20/98	06/20/98	98W3654	pH unit	0.01	6.57	
98W3568-MB-01		Water	06/18/98	06/18/98	06/18/98	98W3568	pH unit	0.01	6.56	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

v4498

Cooler 3-06-17-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 2

Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas Office

Project Name/Code Long Beach Naval Shipyard ACC Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ Regular ☐ rush: ___ days ___ hours Sampled by: See Below

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: Metals TTLC 17	SVOC 8270C	PCB 8082	CN	Cr+6	pH	TPH-d 8015m	Remarks
98SY-M5Fa-S-0		6-17-98	0950	soil	4°C	1	X							
98SY-M5Fb-S-0		6-17-98	0955	soil	4°C	1	X							
98SY-M5Fc-S-0		6-17-98	1000	soil	4°C	1	X							
98SY-M5Fd-S-0		6-17-98	1010	soil	4°C	1	X							
98SY-M5Fe-S-0		6-17-98	1005	soil	4°C	1	X							
No 98SY-RE2c-W-10		6-17-98	1530	water	4°C	1		X	e	DB				✳ Delete analyses as shown to left - do not analyze. Dave Bjostad 6/17/98 1810 via fax to APCL
No 98SY-RE2e-W-10		6-17-98	1530	water	4°C	1			X	e	DB			
No 98SY-RE2e-W-10		6-17-98	1530	water	4°C	1						X	e	DB
No 98SY-RE2e-W-10		6-17-98	1530	water	4°C	1					X	X	e	DB
No 98SY-RE2e-W-10		6-17-98	1530	water	NAOH	1			X	e	DB			
No 98SY-RE2e-W-10		6-17-98	1530	water	HNO_3	1	X	e	DB					
Frank Pons BB'd														

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by Frank Pons Date/Time 6/17/98 / 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Cooler 3-06-17-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 2 of 2

Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas Office

Project Name/Code Long Beach Naval Shipyard AOC Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] Regular [ ] rush: ___ days ___ hours Sampled by: See Below

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: Metals TTLC17	SVOC 8270C	PCB 8082	CN	Cr+6	PH	TPH-d 8015m	Remarks
9854-RE2f-W-10		6.17.98	1530	water	4°C	1		X						
9854-RE2f-W-10		6.17.98	1530	water	4°C	1			X					
9854-RE2f-W-10		6.17.98	1530	water	4°C	1							X	
9854-RE2f-W-10		6.17.98	1530	water	4°C	1					X	X		
9854-RE2f-W-10		6.17.98	1530	water	NAOH	1				X				
9854-RE2f-W-10		6.17.98	1530	water	HNO_3	1	X							

Frank Pe BB-yd

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Pe Date/Time 6/17/98 1800 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients und[illegible]d that all terms described in the proposals, quotations for this project, and/or t[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]es the right to terminat[illegible]ervice or withhold delivery of any reports, if in APCL's sole discretion the terms [illegible] project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 4, 1998

Matrix: Wood/Water

Parameters: Volatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-BT1m-W-10
98SY-M1Wa-B-0
98SY-M2Wa-B-0
98SY-M4Wa-B-0
98SY-M4Wb-B-0
98SY-MW4c-B-0

Introduction

This data review covers 5 wood samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/22/98	Methylene chloride 1,2,3-Trichlorobenzene Hexachlorobutadiene	29.4 27.1 27.7	98SY-BT1m-W-10 98G2787MB01	J J J	A
6/30/98	Bromomethane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene	85.1 30.4 34.1 31.5	98SY-M4Wb-B-0 98G2890MB02	J J J J	A

Date	Compound	%D	Associated Samples	Flag	A or P
7/1/98	Chloromethane Dibromomethane Naphthalene	41.5 27.6 32.6	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-MW4c-B-0 98G2908MB02	J J J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
98G2787MB01	6/22/98	Methylene chloride	2 ug/L	98SY-BT1m-W-10

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
98SY-BT1m-W-10	Methylene chloride	6 ug/L	6U ug/L

Sample 98SY-BT1m-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
98SY-BT1m-W-10	6/18/98	Methylene chloride	6 ug/L	All samples in SDG 98-3473

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All wood samples in SDG 98-3473	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All wood samples in SDG 98-3473	All TCL compounds	No LCS analysis associated with these samples.	LCS analysis required.	J	P

The samples and associated blanks are qualified as estimated (J) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0 were identified as field duplicates. The samples were not evaluated since the dilution factors were different.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 98-3473

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-BT1m-W-10	Methylene chloride 1,2,3-Trichlorobenzene Hexachlorobutadiene	J J J	A	Continuing calibration (%D)
98-3473	98SY-M4Wb-B-0	Bromomethane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene	J J J J	A	Continuing calibration (%D)
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-MW4c-B-0	Chloromethane Dibromomethane Naphthalene	J J J	A	Continuing calibration (%D)
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	All TCL compounds	J	P	Laboratory control samples

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 98-3473

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
98-3473	98SY-BT1m-W-10	Methylene chloride	6U ug/L	A

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-1	Received Date:	06/18/98
Sample ID:	**98SY-BT1M-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260	Prep. Date:	06/23/98	Anal. Date:	06/23/98
Batch No:	98G2787	Prep. No:	-	Anal. Time:	05:19
Data File Name:	3473-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	KW
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	6	B UJ
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	86-114	112
2	Dibromofluoromethane	1868-53-7	86-117	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	102
4	Toluene-d8	2037-26-5	88-109	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	07/02/98	Anal. Date:	07/02/98
Batch No:	98G2908	Prep. No:	–	Anal. Time:	04:12
Data File Name:	3473-02A	Sample Amount:	5 g	Dilution Factor:	500
Methanol Vol.	5.0 mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	2700	< 2700	U UJ
2	Bromobenzene	108-86-1	µg/kg	2700	< 2700	U
3	Bromochloromethane	74-97-5	µg/kg	2700	< 2700	U
4	Bromodichloromethane	75-27-4	µg/kg	2700	< 2700	U
5	Bromoform	75-25-2	µg/kg	2700	< 2700	U
6	Bromomethane	74-83-9	µg/kg	2700	< 2700	U
7	n-Butylbenzene	104-51-8	µg/kg	2700	< 2700	U
8	sec-Butylbenzene	135-98-8	µg/kg	2700	< 2700	U
9	tert-Butylbenzene	98-06-6	µg/kg	2700	< 2700	U
10	Carbon tetrachloride	56-23-5	µg/kg	2700	< 2700	U
11	Chlorobenzene	108-90-7	µg/kg	2700	< 2700	U
12	Chlorodibromomethane	124-48-1	µg/kg	2700	< 2700	U
13	Chloroethane	75-00-3	µg/kg	2700	< 2700	U
14	Chloroform	67-66-3	µg/kg	2700	< 2700	U
15	Chloromethane	74-87-3	µg/kg	2700	< 2700	U
16	2-Chlorotoluene	95-49-8	µg/kg	2700	< 2700	U
17	4-Chlorotoluene	106-43-4	µg/kg	2700	< 2700	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	2700	< 2700	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	2700	< 2700	U
20	Dibromomethane	74-95-3	µg/kg	2700	< 2700	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	2700	< 2700	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	2700	< 2700	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	2700	< 2700	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	2700	< 2700	U
25	1,1-Dichloroethane	75-34-3	µg/kg	2700	< 2700	U
26	1,2-Dichloroethane	107-06-2	µg/kg	2700	< 2700	U
27	1,1-Dichloroethene	75-35-4	µg/kg	2700	< 2700	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	2700	< 2700	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	2700	< 2700	U
30	1,2-Dichloropropane	78-87-5	µg/kg	2700	< 2700	U
31	1,3-Dichloropropane	142-28-9	µg/kg	2700	< 2700	U
32	2,2-Dichloropropane	594-20-7	µg/kg	2700	< 2700	U
33	1,1-Dichloropropene	563-58-6	µg/kg	2700	< 2700	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	2700	< 2700	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	2700	< 2700	U
36	Ethylbenzene	100-41-4	µg/kg	2700	< 2700	U
37	Hexachlorobutadiene	87-68-3	µg/kg	2700	< 2700	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	2700	< 2700	U
39	p-Isopropyltoluene	99-87-6	µg/kg	2700	5000	J

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	2700	< 2700	U UJ
41	Naphthalene	91-20-3	µg/kg	2700	58000	J
42	n-Propylbenzene	103-65-1	µg/kg	2700	< 2700	U UJ
43	Styrene	100-42-5	µg/kg	2700	< 2700	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	2700	< 2700	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	2700	< 2700	U
46	Tetrachloroethene	127-18-4	µg/kg	2700	< 2700	U
47	Toluene	108-88-3	µg/kg	2700	510	J J
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	2700	< 2700	U UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2700	< 2700	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	2700	< 2700	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	2700	< 2700	U
52	Trichloroethene	79-01-6	µg/kg	2700	< 2700	U
53	Trichlorofluoromethane	75-69-4	µg/kg	2700	< 2700	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	2700	< 2700	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	2700	< 2700	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	2700	< 2700	U
57	Vinyl chloride	75-01-4	µg/kg	2700	< 2700	U
58	o-Xylene	95-47-6	µg/kg	2700	< 2700	U
59	m/p-Xylene	108-38-3	µg/kg	2700	< 2700	U
60	Xylenes (total)	1330-20-7	µg/kg	2700	< 2700	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	104
2	Dibromofluoromethane	1868-53-7	80-119	106
3	1,2-Dichloroethane-d4	17060-07-0	80-119	109
4	Toluene-d8	2037-26-5	81-116	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	55
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	51
3	Fluorobenzene	462-06-6	50-200	55
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

RL498

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	07/02/98	Anal. Date:	07/02/98
Batch No:	98G2908	Prep. No:	–	Anal. Time:	04:39
Data File Name:	3473-03A	Sample Amount:	5 g	Dilution Factor:	250
Methanol Vol.	5.0 mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	1300	<1300	U UJ
2	Bromobenzene	108-86-1	µg/kg	1300	<1300	U
3	Bromochloromethane	74-97-5	µg/kg	1300	<1300	U
4	Bromodichloromethane	75-27-4	µg/kg	1300	<1300	U
5	Bromoform	75-25-2	µg/kg	1300	<1300	U
6	Bromomethane	74-83-9	µg/kg	1300	<1300	U
7	n-Butylbenzene	104-51-8	µg/kg	1300	<1300	U
8	sec-Butylbenzene	135-98-8	µg/kg	1300	<1300	U
9	tert-Butylbenzene	98-06-6	µg/kg	1300	<1300	U
10	Carbon tetrachloride	56-23-5	µg/kg	1300	<1300	U
11	Chlorobenzene	108-90-7	µg/kg	1300	<1300	U
12	Chlorodibromomethane	124-48-1	µg/kg	1300	<1300	U
13	Chloroethane	75-00-3	µg/kg	1300	<1300	U
14	Chloroform	67-66-3	µg/kg	1300	<1300	U
15	Chloromethane	74-87-3	µg/kg	1300	<1300	U
16	2-Chlorotoluene	95-49-8	µg/kg	1300	<1300	U
17	4-Chlorotoluene	106-43-4	µg/kg	1300	<1300	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	1300	<1300	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	1300	<1300	U
20	Dibromomethane	74-95-3	µg/kg	1300	<1300	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	1300	<1300	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	1300	<1300	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	1300	<1300	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	1300	<1300	U
25	1,1-Dichloroethane	75-34-3	µg/kg	1300	<1300	U
26	1,2-Dichloroethane	107-06-2	µg/kg	1300	<1300	U
27	1,1-Dichloroethene	75-35-4	µg/kg	1300	<1300	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	1300	<1300	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	1300	<1300	U
30	1,2-Dichloropropane	78-87-5	µg/kg	1300	<1300	U
31	1,3-Dichloropropane	142-28-9	µg/kg	1300	<1300	U
32	2,2-Dichloropropane	594-20-7	µg/kg	1300	<1300	U
33	1,1-Dichloropropene	563-58-6	µg/kg	1300	<1300	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	1300	<1300	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	1300	<1300	U
36	Ethylbenzene	100-41-4	µg/kg	1300	<1300	U
37	Hexachlorobutadiene	87-68-3	µg/kg	1300	<1300	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	1300	<1300	U
39	p-Isopropyltoluene	99-87-6	µg/kg	1300	450	J

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	1300	< 1300	U
41	Naphthalene	91-20-3	µg/kg	1300	3100	
42	n-Propylbenzene	103-65-1	µg/kg	1300	< 1300	U
43	Styrene	100-42-5	µg/kg	1300	< 1300	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	1300	< 1300	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	1300	< 1300	U
46	Tetrachloroethene	127-18-4	µg/kg	1300	180	J
47	Toluene	108-88-3	µg/kg	1300	< 1300	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	1300	< 1300	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	1300	< 1300	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	1300	< 1300	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	1300	< 1300	U
52	Trichloroethene	79-01-6	µg/kg	1300	< 1300	U
53	Trichlorofluoromethane	75-69-4	µg/kg	1300	< 1300	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	1300	< 1300	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	1300	1000	
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	1300	560	J
57	Vinyl chloride	75-01-4	µg/kg	1300	< 1300	U
58	o-Xylene	95-47-6	µg/kg	1300	< 1300	U
59	m/p-Xylene	108-38-3	µg/kg	1300	< 1300	U
60	Xylenes (total)	1330-20-7	µg/kg	1300	< 1300	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	109
2	Dibromofluoromethane	1868-53-7	80-119	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	95
4	Toluene-d8	2037-26-5	81-116	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	72
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	58
3	Fluorobenzene	462-06-6	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	07/02/98	Anal. Date:	07/02/98
Batch No:	98G2908	Prep. No:	–	Anal. Time:	05:07
Data File Name:	3473-04A	Sample Amount:	5 g	Dilution Factor:	50000
Methanol Vol.	5.0 mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	280000	<280000	U
2	Bromobenzene	108-86-1	µg/kg	280000	<280000	U
3	Bromochloromethane	74-97-5	µg/kg	280000	<280000	U
4	Bromodichloromethane	75-27-4	µg/kg	280000	<280000	U
5	Bromoform	75-25-2	µg/kg	280000	<280000	U
6	Bromomethane	74-83-9	µg/kg	280000	<280000	U
7	n-Butylbenzene	104-51-8	µg/kg	280000	<280000	U
8	sec-Butylbenzene	135-98-8	µg/kg	280000	<280000	U
9	tert-Butylbenzene	98-06-6	µg/kg	280000	<280000	U
10	Carbon tetrachloride	56-23-5	µg/kg	280000	<280000	U
11	Chlorobenzene	108-90-7	µg/kg	280000	<280000	U
12	Chlorodibromomethane	124-48-1	µg/kg	280000	<280000	U
13	Chloroethane	75-00-3	µg/kg	280000	<280000	U
14	Chloroform	67-66-3	µg/kg	280000	<280000	U
15	Chloromethane	74-87-3	µg/kg	280000	<280000	U
16	2-Chlorotoluene	95-49-8	µg/kg	280000	<280000	U
17	4-Chlorotoluene	106-43-4	µg/kg	280000	<280000	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	280000	<280000	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	280000	<280000	U
20	Dibromomethane	74-95-3	µg/kg	280000	<280000	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	280000	<280000	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	280000	<280000	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	280000	<280000	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	280000	<280000	U
25	1,1-Dichloroethane	75-34-3	µg/kg	280000	<280000	U
26	1,2-Dichloroethane	107-06-2	µg/kg	280000	<280000	U
27	1,1-Dichloroethene	75-35-4	µg/kg	280000	<280000	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	280000	<280000	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	280000	<280000	U
30	1,2-Dichloropropane	78-87-5	µg/kg	280000	<280000	U
31	1,3-Dichloropropane	142-28-9	µg/kg	280000	<280000	U
32	2,2-Dichloropropane	594-20-7	µg/kg	280000	<280000	U
33	1,1-Dichloropropene	563-58-6	µg/kg	280000	<280000	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	280000	<280000	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	280000	<280000	U
36	Ethylbenzene	100-41-4	µg/kg	280000	<280000	U
37	Hexachlorobutadiene	87-68-3	µg/kg	280000	<280000	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	280000	<280000	U
39	p-Isopropyltoluene	99-87-6	µg/kg	280000	<280000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	280000	< 280000	U
41	Naphthalene	91-20-3	µg/kg	280000	1400000	
42	n-Propylbenzene	103-65-1	µg/kg	280000	< 280000	U
43	Styrene	100-42-5	µg/kg	280000	< 280000	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	280000	< 280000	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	280000	< 280000	U
46	Tetrachloroethene	127-18-4	µg/kg	280000	< 280000	U
47	Toluene	108-88-3	µg/kg	280000	< 280000	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	280000	< 280000	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	280000	< 280000	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	280000	< 280000	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	280000	< 280000	U
52	Trichloroethene	79-01-6	µg/kg	280000	< 280000	U
53	Trichlorofluoromethane	75-69-4	µg/kg	280000	< 280000	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	280000	< 280000	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	280000	< 280000	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	280000	< 280000	U
57	Vinyl chloride	75-01-4	µg/kg	280000	< 280000	U
58	o-Xylene	95-47-6	µg/kg	280000	< 280000	U
59	m/p-Xylene	108-38-3	µg/kg	280000	< 280000	U
60	Xylenes (total)	1330-20-7	µg/kg	280000	< 280000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	97
2	Dibromofluoromethane	1868-53-7	80-119	100
3	1,2-Dichloroethane-d4	17060-07-0	80-119	99
4	Toluene-d8	2037-26-5	81-116	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	88
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	06/30/98	Anal. Date:	06/30/98
Batch No:	98G2890	Prep. No:	–	Anal. Time:	23:54
Data File Name:	3473-05	Sample Amount:	5 g	Dilution Factor:	50000
Methanol Vol.	5.0 mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	280000	< 280000	UJ
2	Bromobenzene	108-86-1	µg/kg	280000	< 280000	U
3	Bromochloromethane	74-97-5	µg/kg	280000	< 280000	U
4	Bromodichloromethane	75-27-4	µg/kg	280000	< 280000	U
5	Bromoform	75-25-2	µg/kg	280000	< 280000	U
6	Bromomethane	74-83-9	µg/kg	280000	< 280000	U
7	n-Butylbenzene	104-51-8	µg/kg	280000	< 280000	U
8	sec-Butylbenzene	135-98-8	µg/kg	280000	< 280000	U
9	tert-Butylbenzene	98-06-6	µg/kg	280000	< 280000	U
10	Carbon tetrachloride	56-23-5	µg/kg	280000	< 280000	U
11	Chlorobenzene	108-90-7	µg/kg	280000	< 280000	U
12	Chlorodibromomethane	124-48-1	µg/kg	280000	< 280000	U
13	Chloroethane	75-00-3	µg/kg	280000	< 280000	U
14	Chloroform	67-66-3	µg/kg	280000	< 280000	U
15	Chloromethane	74-87-3	µg/kg	280000	< 280000	U
16	2-Chlorotoluene	95-49-8	µg/kg	280000	< 280000	U
17	4-Chlorotoluene	106-43-4	µg/kg	280000	< 280000	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	280000	< 280000	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	280000	< 280000	U
20	Dibromomethane	74-95-3	µg/kg	280000	< 280000	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	280000	< 280000	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	280000	< 280000	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	280000	< 280000	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	280000	< 280000	U
25	1,1-Dichloroethane	75-34-3	µg/kg	280000	< 280000	U
26	1,2-Dichloroethane	107-06-2	µg/kg	280000	< 280000	U
27	1,1-Dichloroethene	75-35-4	µg/kg	280000	< 280000	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	280000	< 280000	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	280000	< 280000	U
30	1,2-Dichloropropane	78-87-5	µg/kg	280000	< 280000	U
31	1,3-Dichloropropane	142-28-9	µg/kg	280000	< 280000	U
32	2,2-Dichloropropane	594-20-7	µg/kg	280000	< 280000	U
33	1,1-Dichloropropene	563-58-6	µg/kg	280000	< 280000	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	280000	< 280000	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	280000	< 280000	U
36	Ethylbenzene	100-41-4	µg/kg	280000	< 280000	U
37	Hexachlorobutadiene	87-68-3	µg/kg	280000	< 280000	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	280000	< 280000	U
39	p-Isopropyltoluene	99-87-6	µg/kg	280000	54000	J

15754

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	280000	<280000	U
41	Naphthalene	91-20-3	µg/kg	280000	5500000	
42	n-Propylbenzene	103-65-1	µg/kg	280000	<280000	U
43	Styrene	100-42-5	µg/kg	280000	<280000	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	280000	<280000	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	280000	<280000	U
46	Tetrachloroethene	127-18-4	µg/kg	280000	<280000	U
47	Toluene	108-88-3	µg/kg	280000	<280000	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	280000	<280000	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	280000	<280000	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	280000	<280000	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	280000	<280000	U
52	Trichloroethene	79-01-6	µg/kg	280000	<280000	U
53	Trichlorofluoromethane	75-69-4	µg/kg	280000	<280000	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	280000	<280000	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	280000	<280000	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	280000	<280000	U
57	Vinyl chloride	75-01-4	µg/kg	280000	<280000	U
58	o-Xylene	95-47-6	µg/kg	280000	<280000	U
59	m/p-Xylene	108-38-3	µg/kg	280000	<280000	U
60	Xylenes (total)	1330-20-7	µg/kg	280000	<280000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	96
2	Dibromofluoromethane	1868-53-7	80-119	98
3	1,2-Dichloroethane-d4	17060-07-0	80-119	100
4	Toluene-d8	2037-26-5	81-116	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	101
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-6	Received Date:	06/18/98
Sample ID:	**98SY-MW4C-B-0**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260	Prep. Date:	07/02/98	Anal. Date:	07/02/98
Batch No:	98G2908	Prep. No:	-	Anal. Time:	05:34
Data File Name:	3473-06A	Sample Amount:	5 g	Dilution Factor:	100000
Methanol Vol.	5.0 mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	560000	< 560000	U
2	Bromobenzene	108-86-1	µg/kg	560000	< 560000	U
3	Bromochloromethane	74-97-5	µg/kg	560000	< 560000	U
4	Bromodichloromethane	75-27-4	µg/kg	560000	< 560000	U
5	Bromoform	75-25-2	µg/kg	560000	< 560000	U
6	Bromomethane	74-83-9	µg/kg	560000	< 560000	U
7	n-Butylbenzene	104-51-8	µg/kg	560000	< 560000	U
8	sec-Butylbenzene	135-98-8	µg/kg	560000	< 560000	U
9	tert-Butylbenzene	98-06-6	µg/kg	560000	< 560000	U
10	Carbon tetrachloride	56-23-5	µg/kg	560000	< 560000	U
11	Chlorobenzene	108-90-7	µg/kg	560000	< 560000	U
12	Chlorodibromomethane	124-48-1	µg/kg	560000	< 560000	U
13	Chloroethane	75-00-3	µg/kg	560000	< 560000	U
14	Chloroform	67-66-3	µg/kg	560000	< 560000	U
15	Chloromethane	74-87-3	µg/kg	560000	< 560000	U
16	2-Chlorotoluene	95-49-8	µg/kg	560000	< 560000	U
17	4-Chlorotoluene	106-43-4	µg/kg	560000	< 560000	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	560000	< 560000	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	560000	< 560000	U
20	Dibromomethane	74-95-3	µg/kg	560000	< 560000	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	560000	< 560000	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	560000	< 560000	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	560000	< 560000	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	560000	< 560000	U
25	1,1-Dichloroethane	75-34-3	µg/kg	560000	< 560000	U
26	1,2-Dichloroethane	107-06-2	µg/kg	560000	< 560000	U
27	1,1-Dichloroethene	75-35-4	µg/kg	560000	< 560000	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	560000	< 560000	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	560000	< 560000	U
30	1,2-Dichloropropane	78-87-5	µg/kg	560000	< 560000	U
31	1,3-Dichloropropane	142-28-9	µg/kg	560000	< 560000	U
32	2,2-Dichloropropane	594-20-7	µg/kg	560000	< 560000	U
33	1,1-Dichloropropene	563-58-6	µg/kg	560000	< 560000	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	560000	< 560000	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	560000	< 560000	U
36	Ethylbenzene	100-41-4	µg/kg	560000	< 560000	U
37	Hexachlorobutadiene	87-68-3	µg/kg	560000	< 560000	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	560000	< 560000	U
39	p-Isopropyltoluene	99-87-6	µg/kg	560000	< 560000	U

15760

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	560000	<560000	U
41	Naphthalene	91-20-3	µg/kg	560000	5500000	
42	n-Propylbenzene	103-65-1	µg/kg	560000	<560000	U
43	Styrene	100-42-5	µg/kg	560000	<560000	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	560000	<560000	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	560000	<560000	U
46	Tetrachloroethene	127-18-4	µg/kg	560000	<560000	U
47	Toluene	108-88-3	µg/kg	560000	<560000	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	560000	<560000	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560000	<560000	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	560000	<560000	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	560000	<560000	U
52	Trichloroethene	79-01-6	µg/kg	560000	<560000	U
53	Trichlorofluoromethane	75-69-4	µg/kg	560000	<560000	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	560000	<560000	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	560000	<560000	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	560000	<560000	U
57	Vinyl chloride	75-01-4	µg/kg	560000	<560000	U
58	o-Xylene	95-47-6	µg/kg	560000	<560000	U
59	m/p-Xylene	108-38-3	µg/kg	560000	<560000	U
60	Xylenes (total)	1330-20-7	µg/kg	560000	<560000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	84-120	102
2	Dibromofluoromethane	1868-53-7	80-119	105
3	1,2-Dichloroethane-d4	17060-07-0	80-119	104
4	Toluene-d8	2037-26-5	81-116	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	74
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	65
3	Fluorobenzene	462-06-6	50-200	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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15761

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 8, 1998

Matrix: Wood

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M1Wa-B-0DL
98SY-M2Wa-B-0
98SY-M2Wa-B-0DL
98SY-M4Wa-B-0**
98SY-M4Wa-B-0DL**
98SY-M4Wb-B-0
98SY-MW4c-B-0

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 wood samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/30/98	Benzoic acid 2,4-Dinitrophenol	27.6 36.7	98SY-M1Wa-B-0 98SY-M1Wa-B-0DL 98SY-M2Wa-B-0 98SY-M2Wa-B-0DL 98SY-M4Wa-B-0** 98SY-M4Wa-B-0DL**	J J	A
6/30/98	2,4-Dinitrophenol Diethylphthalate	34.1 38.9	98SY-M4Wb-B-0 98SY-MW4c-B-0	J J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 98-3473	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
98SY-M1Wa-B-0	Perylene-d12	1321626 (1632236-6528946)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
98SY-M2Wa-B-0	Chrysene-d12 Perylene-d12	309396 (1181262-4725048) 191085 (1632236-6528946)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A
98SY-M4Wa-B-0**	Chrysene-d12 Perylene-d12	976719 (1181262-4725048) 818930 (1632236-6528946)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A
98SY-M1Wa-B-0DL	Perylene-d12	1586170 (1632236-6528946)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-M2Wa-B-0DL	Perylene-d12	1066412 (1632236-6528946)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
98SY-M4Wa-B-0DL**	Perylene-d12	1401940 (1632236-6528946)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M1Wa-B-0	Benzo(b)fluoranthene Phenanthrene Pyrene Fluoranthene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J J J J	A
98SY-M2Wa-B-0	Bis(2-ethylhexyl)phthalate Benzo(k)fluoranthene Fluoranthene Phenanthrene Pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J J J J J	A
98SY-M4Wa-B-0**	Acenaphthene Anthracene Benzo(k)fluoranthene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene Chrysene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J J J J J J J J J	A

Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
98SY-M1Wa-B-0	Benzo(b)fluoranthene Phenanthrene Pyrene Fluoranthene	For database purposes these compounds were rejected.	R R R R	A
98SY-M1Wa-B-0DL	All TCL compounds except Benzo(b)fluoranthene, Phenanthrene, Pyrene, and Fluoranthene	For database purposes these compounds were rejected.	R	A
98SY-M2Wa-B-0	Bis(2-ethylhexyl)phthalate Fluoranthene Phenanthrene Pyrene	For database purposes these compounds were rejected.	R R R R	A
98SY-M2Wa-B-0DL	All TCL compounds except Bis(2-ethylhexyl)phthalate, Fluoranthene, Phenanthrene, and Pyrene	For database purposes these compounds were rejected.	R	A
98SY-M4Wa-B-0**	Acenaphthene Anthracene Benzo(k)fluoranthene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene Chrysene	For database purposes these compounds were rejected.	R R R R R R R R R	A
98SY-M4Wa-B-0DL**	All TCL compounds except Acenaphthene, Anthracene, Benzo(k)fluoranthene, Fluoranthene, 2-Methylnaphthalene, Naphthalene, Phenanthrene, Pyrene, and Chrysene	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 98SY-M4Wa-B-0DL** and 98SY-MW4c-B-0 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0DL**	98SY-MW4c-B-0			
Acenaphthalene	642000	1200000	60 (≤35)	J	A
Acenaphthylene	89000	160000	57 (≤35)	J	A
Anthracene	1060000	1400000	28 (≤35)	-	-
Benz(a)anthracene	769000	1100000	35 (≤35)	-	-
Benzo(a)pyrene	440000	578000	27 (≤35)	-	-
Benzo(b)fluoranthene	619000	746000	19 (≤35)	-	-
Benzo(g,h,k)perylene	81000	180000	76 (≤35)	J	A
Benzo(k)fluoranthene	28000	270000	162 (≤35)	J	A
Chrysene	577000	852000	38 (≤35)	J	A
Dibenz(a,h)anthracene	61000	160000	89 (≤35)	J	A
Dibenzofuran	876000	1600000	58 (≤35)	J	A
2,4-Dimethylphenol	93000	120000	25 (≤35)	-	-
Fluoranthene	2200000	3000000	31 (≤35)	-	-
Fluorene	688000	1070000	71 (≤35)	J	A
Indeno(1,2,3-cd)pyrene	100000	210000	71 (≤35)	J	A
2-Methylnaphthalene	48000	1200000	184 (≤35)	J	A
3/4-Methylphenol	28000	350000	170 (≤35)	J	A
2-Methylphenol	140000	180000	25 (≤35)	-	-
Naphthalene	715000	1800000	86 (≤35)	J	A
Phenanthrene	3900000	5500000	34 (≤35)	-	-

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0DL**	98SY-MW4c-B-0			
Pyrene	1700000	2200000	26 (≤35)	-	-
Phenol	560000U	70000	200 (≤35)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 98-3473

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M1Wa-B-0DL 98SY-M2Wa-B-0 98SY-M2Wa-B-0DL 98SY-M4Wa-B-0** 98SY-M4Wa-B-0DL**	Benzoic acid 2,4-Dinitrophenol	J J	A	Continuing calibration (%D)
98-3473	98SY-M4Wb-B-0 98SY-MW4c-B-0	2,4-Dinitrophenol Diethylphthalate	J J	A	Continuing calibration (%D)
98-3473	98SY-M1Wa-B-0 98SY-M1Wa-B-0DL 98SY-M2Wa-B-0 98SY-M2Wa-B-0DL 98SY-M4Wa-B-0** 98SY-M4Wa-B-0DL** 98SY-M4Wb-B-0 98SY-MW4c-B-0	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
98-3473	98SY-M1Wa-B-0 98SY-M1Wa-B-0DL 98SY-M2Wa-B-0DL 98SY-M4Wa-B-0DL**	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A	Internal standards (area)
98-3473	98SY-M2Wa-B-0 98SY-M4Wa-B-0**	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A	Internal standards (area)
98-3473	98SY-M1Wa-B-0	Benzo(b)fluoranthene Phenanthrene Pyrene Fluoranthene	J J J J	A	Compound quantitation and CRQLs
98-3473	98SY-M2Wa-B-0	Bis(2-ethylhexyl)phthalate Benzo(k)fluoranthene Fluoranthene Phenanthrene Pyrene	J J J J J	A	Compound quantitation and CRQLs

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M4Wa-B-0**	Acenaphthene Anthracene Benzo(k)fluoranthene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene Chrysene	J J J J J J J J J	A	Compound quantitation and CRQLs
98-3473	98SY-M1Wa-B-0	Benzo(b)fluoranthene Phenanthrene Pyrene Fluoranthene	R R R R	A	Overall assessment of data
98-3473	98SY-M1Wa-B-0DL	All TCL compounds except Benzo(b)fluoranthene, Phenanthrene, Pyrene, and Fluoranthene	R	A	Overall assessment of data
98-3473	98SY-M2Wa-B-0	Bis(2-ethylhexyl)phthalate Fluoranthene Phenanthrene Pyrene	R R R R R	A	Overall assessment of data
98-3473	98SY-M2Wa-B-0DL	All TCL compounds except Bis(2-ethylhexyl)phthalate, Fluoranthene, Phenanthrene, and Pyrene	R	A	Overall assessment of data
98-3473	98SY-M4Wa-B-0**	Acenaphthene Anthracene Benzo(k)fluoranthene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene Chrysene	R R R R R R R R R	A	Overall assessment of data
98-3473	98SY-M4Wa-B-0DL**	All TCL compounds except Acenaphthene, Anthracene, Benzo(k)fluoranthene, Fluoranthene, 2-Methylnaphthalene, Naphthalene, Phenanthrene, Pyrene, and Chrysene	R	A	Overall assessment of data

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M4Wa-B-0DL** 98SY-MW4c-B-0	Acenaphthene Acenaphthylene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Dibenzofuran Fluorene Indeno(1,2,3-cd)pyrene 2-Methylnaphthalene 3/4-Methylphenol Naphthalene Phenol	J J J J J J J J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	12:02
Data File Name:	3473-02	Sample Amount:	12.0 g	Dilution Factor:	50
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	27000	63000	
2	Acenaphthylene	208-96-8	µg/kg	27000	3200	J
3	Acetophenone	98-86-2	µg/kg	27000	< 27000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	27000	< 27000	U
5	Aniline	62-53-3	µg/kg	27000	< 27000	U
6	Anthracene	120-12-7	µg/kg	27000	81000	
7	Benz(a)anthracene	56-55-3	µg/kg	27000	130000	
8	Benzidine	92-87-5	µg/kg	55000	< 55000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	27000	82000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	27000	120000	R
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	27000	< 27000	UJ
12	Benzo(k)fluoranthene	207-08-9	µg/kg	27000	170000	J
13	Benzoic acid	65-85-0	µg/kg	140000	< 140000	UJ
14	Benzyl alcohol	100-51-6	µg/kg	55000	< 55000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	27000	< 27000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	27000	< 27000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	27000	< 27000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	27000	< 27000	U
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	27000	< 27000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	27000	< 27000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	55000	< 55000	U
22	4-Chloroaniline	106-47-8	µg/kg	55000	< 55000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	27000	< 27000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	27000	< 27000	U
25	2-Chlorophenol	95-57-8	µg/kg	27000	< 27000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	27000	< 27000	U
27	Chrysene	218-01-9	µg/kg	27000	83000	
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	27000	< 27000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	27000	< 27000	UJ
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	27000	6900	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	27000	< 27000	U
32	Dibenzofuran	132-64-9	µg/kg	27000	42800	
33	1,2-Dichlorobenzene	95-50-1	µg/kg	27000	< 27000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	27000	< 27000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	27000	< 27000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	55000	< 55000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	27000	< 27000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	27000	< 27000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	27000	< 27000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	27000	< 27000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	27000	< 27000	U
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	27000	< 27000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	27000	< 27000	U
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	140000	< 140000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	140000	< 140000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	140000	< 140000	UJ
47	2,4-Dinitrotoluene	121-14-2	µg/kg	27000	< 27000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	27000	< 27000	U
49	Diphenylamine	122-39-4	µg/kg	27000	< 27000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	27000	< 27000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	27000	< 27000	U
52	Fluoranthene	206-44-0	µg/kg	27000	220000	R
53	Fluorene	86-73-7	µg/kg	27000	44400	
54	Hexachlorobenzene	118-74-1	µg/kg	27000	< 27000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	27000	< 27000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	27000	< 27000	U
57	Hexachloroethane	67-72-1	µg/kg	27000	< 27000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	27000	21000	J
59	Isophorone	78-59-1	µg/kg	27000	< 27000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	27000	< 27000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	27000	< 27000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	27000	20000	J
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	27000	3600	J
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	27000	< 27000	U
65	Naphthalene	91-20-3	µg/kg	27000	38200	
66	1-Naphthylamine	134-32-7	µg/kg	27000	< 27000	U
67	2-Naphthylamine	91-59-8	µg/kg	27000	< 27000	U
68	2-Nitroaniline	88-74-4	µg/kg	140000	< 140000	U
69	3-Nitroaniline	99-09-2	µg/kg	140000	< 140000	U
70	4-Nitroaniline	100-01-6	µg/kg	140000	< 140000	U
71	Nitrobenzene	98-95-3	µg/kg	27000	< 27000	U
72	2-Nitrophenol	88-75-5	µg/kg	27000	< 27000	U
73	4-Nitrophenol	100-02-7	µg/kg	140000	< 140000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	27000	< 27000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	27000	< 27000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	27000	< 27000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	27000	< 27000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	27000	< 27000	U
79	Pentachlorobenzene	608-93-5	µg/kg	140000	< 140000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	140000	< 140000	U
81	Phenacetin	62-44-2	µg/kg	27000	< 27000	U
82	Phenanthrene	85-01-8	µg/kg	27000	280000	R
83	Phenol	108-95-2	µg/kg	27000	< 27000	U
84	2-Picoline	109-06-8	µg/kg	55000	< 55000	U
85	Pronamide	23950-58-5	µg/kg	27000	< 27000	U
86	Pyrene	129-00-0	µg/kg	27000	250000	R
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	27000	< 27000	U
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	27000	< 27000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	27000	< 27000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	27000	< 27000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	27000	< 27000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	204	
2	2-Fluorophenol	367-12-4		25-120	115	
3	Nitrobenzene-d5	4165-60-0		23-119	197	
4	Phenol-d5	4165-62-2		25-112	169	
5	Terphenyl-d14	1718-51-0		19-136	312	
6	2,4,6-Tribromophenol	118-79-6		19-121	209	
# of out-of-control					5	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	110	
2	Chrysene-d12	1719-03-5		50-200	86	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	90	
4	Naphthalene-d8	1146-65-2		50-200	97	
5	Perylene-d12	1520-96-3		50-200	40	
6	Phenanthrene-d10	1517-22-2		50-200	87	
# of out-of-control					1	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2DL	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0DL**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	15:41
Data File Name:	3473-02A	Sample Amount:	12.0 g	Dilution Factor:	250
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	140000	58000	J R
2	Acenaphthylene	208-96-8	µg/kg	140000	<140000	U
3	Acetophenone	98-86-2	µg/kg	140000	<140000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	140000	<140000	U
5	Aniline	62-53-3	µg/kg	140000	<140000	U
6	Anthracene	120-12-7	µg/kg	140000	89000	J
7	Benz(a)anthracene	56-55-3	µg/kg	140000	120000	J
8	Benzidine	92-87-5	µg/kg	270000	<270000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	140000	81000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	140000	100000	J J
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	140000	15000	J R
12	Benzo(k)fluoranthene	207-08-9	µg/kg	140000	45000	J
13	Benzoic acid	65-85-0	µg/kg	680000	<680000	U
14	Benzyl alcohol	100-51-6	µg/kg	270000	<270000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	140000	<140000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	140000	<140000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	140000	<140000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	140000	<140000	U
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	140000	<140000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	140000	<140000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	270000	<270000	U
22	4-Chloroaniline	106-47-8	µg/kg	270000	<270000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	140000	<140000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	140000	<140000	U
25	2-Chlorophenol	95-57-8	µg/kg	140000	<140000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	140000	<140000	U
27	Chrysene	218-01-9	µg/kg	140000	110000	J
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	140000	<140000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	140000	<140000	U
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	140000	21000	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	140000	<140000	U
32	Dibenzofuran	132-64-9	µg/kg	140000	40000	J
33	1,2-Dichlorobenzene	95-50-1	µg/kg	140000	<140000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	140000	<140000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	140000	<140000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	270000	<270000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	140000	<140000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	140000	<140000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	140000	<140000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	140000	<140000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	140000	< 140000	U R
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	140000	< 140000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	140000	< 140000	U
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	680000	< 680000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	680000	< 680000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	680000	< 680000	U
47	2,4-Dinitrotoluene	121-14-2	µg/kg	140000	< 140000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	140000	< 140000	U
49	Diphenylamine	122-39-4	µg/kg	140000	< 140000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	140000	< 140000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	140000	< 140000	U
52	Fluoranthene	206-44-0	µg/kg	140000	300000	R
53	Fluorene	86-73-7	µg/kg	140000	41000	J R
54	Hexachlorobenzene	118-74-1	µg/kg	140000	< 140000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	140000	< 140000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	140000	< 140000	U
57	Hexachloroethane	67-72-1	µg/kg	140000	< 140000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	140000	20000	J
59	Isophorone	78-59-1	µg/kg	140000	< 140000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	140000	< 140000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	140000	< 140000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	140000	17000	J
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	140000	< 140000	U
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	140000	< 140000	U
65	Naphthalene	91-20-3	µg/kg	140000	34000	J
66	1-Naphthylamine	134-32-7	µg/kg	140000	< 140000	U
67	2-Naphthylamine	91-59-8	µg/kg	140000	< 140000	U
68	2-Nitroaniline	88-74-4	µg/kg	680000	< 680000	U
69	3-Nitroaniline	99-09-2	µg/kg	680000	< 680000	U
70	4-Nitroaniline	100-01-6	µg/kg	680000	< 680000	U
71	Nitrobenzene	98-95-3	µg/kg	140000	< 140000	U
72	2-Nitrophenol	88-75-5	µg/kg	140000	< 140000	U
73	4-Nitrophenol	100-02-7	µg/kg	680000	< 680000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	140000	< 140000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	140000	< 140000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	140000	< 140000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	140000	< 140000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	140000	< 140000	U
79	Pentachlorobenzene	608-93-5	µg/kg	680000	< 680000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	680000	< 680000	U
81	Phenacetin	62-44-2	µg/kg	140000	< 140000	U
82	Phenanthrene	85-01-8	µg/kg	140000	450000	
83	Phenol	108-95-2	µg/kg	140000	< 140000	U R
84	2-Picoline	109-06-8	µg/kg	270000	< 270000	U
85	Pronamide	23950-58-5	µg/kg	140000	< 140000	U
86	Pyrene	129-00-0	µg/kg	140000	277000	
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	140000	< 140000	U R
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	140000	< 140000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	140000	< 140000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	140000	< 140000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	140000	< 140000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	179	
2	2-Fluorophenol	367-12-4		25-120	100	
3	Nitrobenzene-d5	4165-60-0		23-119	194	
4	Phenol-d5	4165-62-2		25-112	150	
5	Terphenyl-d14	1718-51-0		19-136	264	
6	2,4,6-Tribromophenol	118-79-6		19-121	172	
# of out-of-control					5	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	109	
2	Chrysene-d12	1719-03-5		50-200	133	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	85	
4	Naphthalene-d8	1146-65-2		50-200	94	
5	Perylene-d12	1520-96-3		50-200	49	
6	Phenanthrene-d10	1517-22-2		50-200	106	
# of out-of-control					1	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0DL**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	12:41
Data File Name:	3473-03	Sample Amount:	12.0 g	Dilution Factor:	25
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	13000	13000	J
2	Acenaphthylene	208-96-8	µg/kg	13000	< 13000	U
3	Acetophenone	98-86-2	µg/kg	13000	< 13000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	13000	3500	J
5	Aniline	62-53-3	µg/kg	13000	< 13000	U
6	Anthracene	120-12-7	µg/kg	13000	43000	
7	Benz(a)anthracene	56-55-3	µg/kg	13000	< 13000	UJ
8	Benzidine	92-87-5	µg/kg	27000	< 27000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	13000	31000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	13000	< 13000	UJ
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	13000	28000	J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	13000	110000	J
13	Benzoic acid	65-85-0	µg/kg	67000	< 67000	UJ
14	Benzyl alcohol	100-51-6	µg/kg	27000	< 27000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	13000	< 13000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	13000	< 13000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	13000	< 13000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	13000	75000	R
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	13000	< 13000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	13000	< 13000	UJ
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	27000	< 27000	U
22	4-Chloroaniline	106-47-8	µg/kg	27000	< 27000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	13000	< 13000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	13000	< 13000	U
25	2-Chlorophenol	95-57-8	µg/kg	13000	< 13000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	13000	< 13000	U
27	Chrysene	218-01-9	µg/kg	13000	58000	J
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	13000	6900	J
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	13000	< 13000	UJ
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	13000	24900	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	13000	2300	J
32	Dibenzofuran	132-64-9	µg/kg	13000	< 13000	U
33	1,2-Dichlorobenzene	95-50-1	µg/kg	13000	< 13000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	13000	< 13000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	13000	< 13000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	27000	< 27000	UJ
37	2,4-Dichlorophenol	120-83-2	µg/kg	13000	< 13000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	13000	< 13000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	13000	< 13000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	13000	< 13000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	13000	< 13000	U
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	13000	< 13000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	13000	33000	
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	67000	< 67000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	67000	< 67000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	67000	< 67000	~~R~~ UJ
47	2,4-Dinitrotoluene	121-14-2	µg/kg	13000	< 13000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	13000	< 13000	U
49	Diphenylamine	122-39-4	µg/kg	13000	< 13000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	13000	< 13000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	13000	< 13000	U
52	Fluoranthene	206-44-0	µg/kg	13000	99000	~~E~~ R
53	Fluorene	86-73-7	µg/kg	13000	19000	
54	Hexachlorobenzene	118-74-1	µg/kg	13000	< 13000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	13000	< 13000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	13000	< 13000	U
57	Hexachloroethane	67-72-1	µg/kg	13000	< 13000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	13000	< 13000	~~R~~ UJ
59	Isophorone	78-59-1	µg/kg	13000	< 13000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	13000	< 13000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	13000	< 13000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	13000	< 13000	U
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	13000	55000	
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	13000	28000	
65	Naphthalene	91-20-3	µg/kg	13000	2000	J
66	1-Naphthylamine	134-32-7	µg/kg	13000	< 13000	U
67	2-Naphthylamine	91-59-8	µg/kg	13000	< 13000	U
68	2-Nitroaniline	88-74-4	µg/kg	67000	< 67000	U
69	3-Nitroaniline	99-09-2	µg/kg	67000	< 67000	U
70	4-Nitroaniline	100-01-6	µg/kg	67000	< 67000	U
71	Nitrobenzene	98-95-3	µg/kg	13000	< 13000	U
72	2-Nitrophenol	88-75-5	µg/kg	13000	< 13000	U
73	4-Nitrophenol	100-02-7	µg/kg	67000	< 67000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	13000	< 13000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	13000	< 13000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	13000	< 13000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	13000	< 13000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	13000	< 13000	U
79	Pentachlorobenzene	608-93-5	µg/kg	67000	< 67000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	67000	< 67000	U
81	Phenacetin	62-44-2	µg/kg	13000	< 13000	U
82	Phenanthrene	85-01-8	µg/kg	13000	230000	~~E~~ R
83	Phenol	108-95-2	µg/kg	13000	37000	
84	2-Picoline	109-06-8	µg/kg	27000	< 27000	U
85	Pronamide	23950-58-5	µg/kg	13000	< 13000	U
86	Pyrene	129-00-0	µg/kg	13000	371000	~~E~~ R
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	13000	< 13000	U
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	13000	< 13000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	13000	< 13000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	13000	< 13000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	13000	< 13000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	141	
2	2-Fluorophenol	367-12-4		25-120	74	
3	Nitrobenzene-d5	4165-60-0		23-119	114	
4	Phenol-d5	4165-62-2		25-112	108	
5	Terphenyl-d14	1718-51-0		19-136	221	
6	2,4,6-Tribromophenol	118-79-6		19-121	90	
# of out-of-control					2	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	107	
2	Chrysene-d12	1719-03-5		50-200	13	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	84	
4	Naphthalene-d8	1146-65-2		50-200	90	
5	Perylene-d12	1520-96-3		50-200	6	
6	Phenanthrene-d10	1517-22-2		50-200	57	
# of out-of-control					2	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3DL	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0DL**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	16:58
Data File Name:	3473-03A	Sample Amount:	12.0 g	Dilution Factor:	250
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	130000	12000	J R
2	Acenaphthylene	208-96-8	µg/kg	130000	<130000	U
3	Acetophenone	98-86-2	µg/kg	130000	<130000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	130000	<130000	U
5	Aniline	62-53-3	µg/kg	130000	<130000	U
6	Anthracene	120-12-7	µg/kg	130000	45000	J
7	Benz(a)anthracene	56-55-3	µg/kg	130000	77000	J
8	Benzidine	92-87-5	µg/kg	270000	<270000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	130000	46000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	130000	82000	J
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	130000	14000	J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	130000	<130000	U
13	Benzoic acid	65-85-0	µg/kg	670000	<670000	U
14	Benzyl alcohol	100-51-6	µg/kg	270000	<270000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	130000	<130000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	130000	<130000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	130000	<130000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	130000	67000	J
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	130000	<130000	U R
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	130000	<130000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	270000	<270000	U
22	4-Chloroaniline	106-47-8	µg/kg	270000	<270000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	130000	<130000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	130000	<130000	U
25	2-Chlorophenol	95-57-8	µg/kg	130000	<130000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	130000	<130000	U
27	Chrysene	218-01-9	µg/kg	130000	67000	J
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	130000	7900	J
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	130000	<130000	U
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	130000	14000	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	130000	<130000	U
32	Dibenzofuran	132-64-9	µg/kg	130000	14000	J
33	1,2-Dichlorobenzene	95-50-1	µg/kg	130000	<130000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	130000	<130000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	130000	<130000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	270000	<270000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	130000	<130000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	130000	<130000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	130000	<130000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	130000	<130000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	130000	< 130000	U R
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	130000	< 130000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	130000	12000	J
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	670000	< 670000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	670000	< 670000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	670000	< 670000	U
47	2,4-Dinitrotoluene	121-14-2	µg/kg	130000	< 130000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	130000	< 130000	U
49	Diphenylamine	122-39-4	µg/kg	130000	< 130000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	130000	< 130000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	130000	< 130000	U
52	Fluoranthene	206-44-0	µg/kg	130000	212000	
53	Fluorene	86-73-7	µg/kg	130000	18000	J R
54	Hexachlorobenzene	118-74-1	µg/kg	130000	< 130000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	130000	< 130000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	130000	< 130000	U
57	Hexachloroethane	67-72-1	µg/kg	130000	< 130000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	130000	17000	J
59	Isophorone	78-59-1	µg/kg	130000	< 130000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	130000	< 130000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	130000	< 130000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	130000	< 130000	U
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	130000	47000	J
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	130000	24000	J
65	Naphthalene	91-20-3	µg/kg	130000	< 130000	U
66	1-Naphthylamine	134-32-7	µg/kg	130000	< 130000	U
67	2-Naphthylamine	91-59-8	µg/kg	130000	< 130000	U
68	2-Nitroaniline	88-74-4	µg/kg	670000	< 670000	U
69	3-Nitroaniline	99-09-2	µg/kg	670000	< 670000	U
70	4-Nitroaniline	100-01-6	µg/kg	670000	< 670000	U
71	Nitrobenzene	98-95-3	µg/kg	130000	< 130000	U
72	2-Nitrophenol	88-75-5	µg/kg	130000	< 130000	U
73	4-Nitrophenol	100-02-7	µg/kg	670000	< 670000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	130000	< 130000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	130000	< 130000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	130000	< 130000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	130000	< 130000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	130000	< 130000	U
79	Pentachlorobenzene	608-93-5	µg/kg	670000	< 670000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	670000	< 670000	U
81	Phenacetin	62-44-2	µg/kg	130000	< 130000	U
82	Phenanthrene	85-01-8	µg/kg	130000	253000	
83	Phenol	108-95-2	µg/kg	130000	32000	J R
84	2-Picoline	109-06-8	µg/kg	270000	< 270000	U
85	Pronamide	23950-58-5	µg/kg	130000	< 130000	U
86	Pyrene	129-00-0	µg/kg	130000	255000	
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	130000	< 130000	U R
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	130000	< 130000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	130000	< 130000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	130000	< 130000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	130000	< 130000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	125	
2	2-Fluorophenol	367-12-4		25-120	56	
3	Nitrobenzene-d5	4165-60-0		23-119	110	
4	Phenol-d5	4165-62-2		25-112	90	
5	Terphenyl-d14	1718-51-0		19-136	254	
6	2,4,6-Tribromophenol	118-79-6		19-121	136	
# of out-of-control					3	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	117	
2	Chrysene-d12	1719-03-5		50-200	96	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	94	
4	Naphthalene-d8	1146-65-2		50-200	101	
5	Perylene-d12	1520-96-3		50-200	33	
6	Phenanthrene-d10	1517-22-2		50-200	111	
# of out-of-control					1	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	13:20
Data File Name:	3473-04	Sample Amount:	12.0 g	Dilution Factor:	100
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	56000	490000	~~E~~R
2	Acenaphthylene	208-96-8	µg/kg	56000	83700	
3	Acetophenone	98-86-2	µg/kg	56000	< 56000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	56000	< 56000	U
5	Aniline	62-53-3	µg/kg	56000	< 56000	U
6	Anthracene	120-12-7	µg/kg	56000	2920000	~~E~~R
7	Benz(a)anthracene	56-55-3	µg/kg	56000	1310000	J
8	Benzidine	92-87-5	µg/kg	110000	< 110000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	56000	220000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	56000	< 56000	~~U~~UJ
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	56000	81200	J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	56000	790000	~~E~~R
13	Benzoic acid	65-85-0	µg/kg	280000	< 280000	~~U~~UJ
14	Benzyl alcohol	100-51-6	µg/kg	110000	< 110000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	56000	< 56000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	56000	< 56000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	56000	31000	J
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	56000	< 56000	~~U~~UJ
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	56000	< 56000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	56000	< 56000	~~U~~UJ
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	110000	< 110000	U
22	4-Chloroaniline	106-47-8	µg/kg	110000	< 110000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	56000	< 56000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	56000	5000	J
25	2-Chlorophenol	95-57-8	µg/kg	56000	< 56000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	56000	< 56000	U
27	Chrysene	218-01-9	µg/kg	56000	1000000	~~E~~R
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	56000	< 56000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	56000	< 56000	~~U~~UJ
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	56000	30000	~~J~~J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	56000	< 56000	U
32	Dibenzofuran	132-64-9	µg/kg	56000	< 56000	U
33	1,2-Dichlorobenzene	95-50-1	µg/kg	56000	< 56000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	56000	< 56000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	56000	< 56000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	110000	< 110000	~~U~~UJ
37	2,4-Dichlorophenol	120-83-2	µg/kg	56000	< 56000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	56000	< 56000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	56000	< 56000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	56000	< 56000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	56000	< 56000	U
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	56000	< 56000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	56000	87200	
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	280000	< 280000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	280000	< 280000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	280000	< 280000	UJ
47	2,4-Dinitrotoluene	121-14-2	µg/kg	56000	< 56000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	56000	< 56000	U
49	Diphenylamine	122-39-4	µg/kg	56000	< 56000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	56000	< 56000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	56000	< 56000	U
52	Fluoranthene	206-44-0	µg/kg	56000	1290000	R
53	Fluorene	86-73-7	µg/kg	56000	510000	
54	Hexachlorobenzene	118-74-1	µg/kg	56000	< 56000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	56000	< 56000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	56000	< 56000	U
57	Hexachloroethane	67-72-1	µg/kg	56000	< 56000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	56000	< 56000	UJ
59	Isophorone	78-59-1	µg/kg	56000	< 56000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	56000	< 56000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	56000	< 56000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	56000	400000	R
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	56000	280000	
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	56000	140000	
65	Naphthalene	91-20-3	µg/kg	56000	530000	R
66	1-Naphthylamine	134-32-7	µg/kg	56000	< 56000	U
67	2-Naphthylamine	91-59-8	µg/kg	56000	< 56000	U
68	2-Nitroaniline	88-74-4	µg/kg	280000	< 280000	U
69	3-Nitroaniline	99-09-2	µg/kg	280000	< 280000	U
70	4-Nitroaniline	100-01-6	µg/kg	280000	< 280000	U
71	Nitrobenzene	98-95-3	µg/kg	56000	< 56000	U
72	2-Nitrophenol	88-75-5	µg/kg	56000	< 56000	U
73	4-Nitrophenol	100-02-7	µg/kg	280000	< 280000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	56000	< 56000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	56000	< 56000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	56000	< 56000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	56000	< 56000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	56000	< 56000	U
79	Pentachlorobenzene	608-93-5	µg/kg	280000	< 280000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	280000	< 280000	U
81	Phenacetin	62-44-2	µg/kg	56000	< 56000	U
82	Phenanthrene	85-01-8	µg/kg	56000	3090000	R
83	Phenol	108-95-2	µg/kg	56000	15000	J
84	2-Picoline	109-06-8	µg/kg	110000	6800	J
85	Pronamide	23950-58-5	µg/kg	56000	< 56000	U
86	Pyrene	129-00-0	µg/kg	56000	1860000	R
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	56000	< 56000	U
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	56000	< 56000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	56000	< 56000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	56000	< 56000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	56000	< 56000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	92	
2	2-Fluorophenol	367-12-4		25-120	53	
3	Nitrobenzene-d5	4165-60-0		23-119	88	
4	Phenol-d5	4165-62-2		25-112	95	
5	Terphenyl-d14	1718-51-0		19-136	205	
6	2,4,6-Tribromophenol	118-79-6		19-121	99	
# of out-of-control					1	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	116	
2	Chrysene-d12	1719-03-5		50-200	41	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	86	
4	Naphthalene-d8	1146-65-2		50-200	95	
5	Perylene-d12	1520-96-3		50-200	25	
6	Phenanthrene-d10	1517-22-2		50-200	68	
# of out-of-control					2	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4DL	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0DL**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	17:37
Data File Name:	3473-04A	Sample Amount:	12.0 g	Dilution Factor:	1000
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560000	642000	
2	Acenaphthylene	208-96-8	µg/kg	560000	89000	J
3	Acetophenone	98-86-2	µg/kg	560000	< 560000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	560000	< 560000	U
5	Aniline	62-53-3	µg/kg	560000	< 560000	U
6	Anthracene	120-12-7	µg/kg	560000	1060000	
7	Benz(a)anthracene	56-55-3	µg/kg	560000	769000	
8	Benzidine	92-87-5	µg/kg	1100000	< 1100000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	560000	440000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	560000	619000	
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	560000	81000	J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	560000	280000	
13	Benzoic acid	65-85-0	µg/kg	2800000	< 2800000	U
14	Benzyl alcohol	100-51-6	µg/kg	1100000	< 1100000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560000	< 560000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560000	< 560000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560000	< 560000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560000	< 560000	U
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560000	< 560000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560000	< 560000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100000	< 1100000	U
22	4-Chloroaniline	106-47-8	µg/kg	1100000	< 1100000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	560000	< 560000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	560000	< 560000	U
25	2-Chlorophenol	95-57-8	µg/kg	560000	< 560000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560000	< 560000	U
27	Chrysene	218-01-9	µg/kg	560000	577000	
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560000	< 560000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560000	< 560000	U
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	560000	61000	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	560000	< 560000	U
32	Dibenzofuran	132-64-9	µg/kg	560000	876000	
33	1,2-Dichlorobenzene	95-50-1	µg/kg	560000	< 560000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	560000	< 560000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	560000	< 560000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100000	< 1100000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	560000	< 560000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	560000	< 560000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	560000	< 560000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560000	< 560000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	560000	< 560000	U R
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	560000	< 560000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	560000	93000	J
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	2800000	< 2800000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800000	< 2800000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	2800000	< 2800000	U
47	2,4-Dinitrotoluene	121-14-2	µg/kg	560000	< 560000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	560000	< 560000	U
49	Diphenylamine	122-39-4	µg/kg	560000	< 560000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	560000	< 560000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	560000	< 560000	U
52	Fluoranthene	206-44-0	µg/kg	560000	2200000	
53	Fluorene	86-73-7	µg/kg	560000	688000	R
54	Hexachlorobenzene	118-74-1	µg/kg	560000	< 560000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	560000	< 560000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	560000	< 560000	U
57	Hexachloroethane	67-72-1	µg/kg	560000	< 560000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560000	100000	J
59	Isophorone	78-59-1	µg/kg	560000	< 560000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	560000	< 560000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	560000	< 560000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	560000	480000	J
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560000	280000	J
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560000	140000	J R
65	Naphthalene	91-20-3	µg/kg	560000	715000	J R
66	1-Naphthylamine	134-32-7	µg/kg	560000	< 560000	U R
67	2-Naphthylamine	91-59-8	µg/kg	560000	< 560000	U
68	2-Nitroaniline	88-74-4	µg/kg	2800000	< 2800000	U
69	3-Nitroaniline	99-09-2	µg/kg	2800000	< 2800000	U
70	4-Nitroaniline	100-01-6	µg/kg	2800000	< 2800000	U
71	Nitrobenzene	98-95-3	µg/kg	560000	< 560000	U
72	2-Nitrophenol	88-75-5	µg/kg	560000	< 560000	U
73	4-Nitrophenol	100-02-7	µg/kg	2800000	< 2800000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560000	< 560000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	560000	< 560000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	560000	< 560000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	560000	< 560000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	560000	< 560000	U
79	Pentachlorobenzene	608-93-5	µg/kg	2800000	< 2800000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800000	< 2800000	U
81	Phenacetin	62-44-2	µg/kg	560000	< 560000	U
82	Phenanthrene	85-01-8	µg/kg	560000	3900000	
83	Phenol	108-95-2	µg/kg	560000	< 560000	U R
84	2-Picoline	109-06-8	µg/kg	1100000	< 1100000	U
85	Pronamide	23950-58-5	µg/kg	560000	< 560000	U
86	Pyrene	129-00-0	µg/kg	560000	1700000	
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	560000	< 560000	U R
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	560000	< 560000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560000	< 560000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	560000	< 560000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	560000	< 560000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	80	
2	2-Fluorophenol	367-12-4		25-120	53	
3	Nitrobenzene-d5	4165-60-0		23-119	40	
4	Phenol-d5	4165-62-2		25-112	80	
5	Terphenyl-d14	1718-51-0		19-136	378	
6	2,4,6-Tribromophenol	118-79-6		19-121	0	
# of out-of-control					2	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	102	
2	Chrysene-d12	1719-03-5		50-200	122	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	76	
4	Naphthalene-d8	1146-65-2		50-200	85	
5	Perylene-d12	1520-96-3		50-200	43	
6	Phenanthrene-d10	1517-22-2		50-200	100	
# of out-of-control					1	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	19:53
Data File Name:	3473-05A	Sample Amount:	12.0 g	Dilution Factor:	1000
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560000	640000	
2	Acenaphthylene	208-96-8	µg/kg	560000	67000	J
3	Acetophenone	98-86-2	µg/kg	560000	< 560000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	560000	< 560000	U
5	Aniline	62-53-3	µg/kg	560000	< 560000	U
6	Anthracene	120-12-7	µg/kg	560000	817000	
7	Benz(a)anthracene	56-55-3	µg/kg	560000	660000	
8	Benzidine	92-87-5	µg/kg	1100000	< 1100000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	560000	380000	J
10	Benzo(b)fluoranthene	205-99-2	µg/kg	560000	410000	J
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	560000	150000	J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	560000	240000	J
13	Benzoic acid	65-85-0	µg/kg	2800000	< 2800000	U
14	Benzyl alcohol	100-51-6	µg/kg	1100000	< 1100000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560000	< 560000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560000	< 560000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560000	< 560000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560000	< 560000	U
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560000	< 560000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560000	< 560000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100000	< 1100000	U
22	4-Chloroaniline	106-47-8	µg/kg	1100000	< 1100000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	560000	< 560000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	560000	< 560000	U
25	2-Chlorophenol	95-57-8	µg/kg	560000	< 560000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560000	< 560000	U
27	Chrysene	218-01-9	µg/kg	560000	560000	J
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560000	< 560000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560000	< 560000	U
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	560000	160000	J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	560000	< 560000	U
32	Dibenzofuran	132-64-9	µg/kg	560000	923000	
33	1,2-Dichlorobenzene	95-50-1	µg/kg	560000	< 560000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	560000	< 560000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	560000	< 560000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100000	< 1100000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	560000	< 560000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	560000	< 560000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	560000	< 560000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560000	< 560000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	560000	<560000	U
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	560000	<560000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	560000	<560000	U
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	2800000	<2800000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800000	<2800000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	2800000	<2800000	U
47	2,4-Dinitrotoluene	121-14-2	µg/kg	560000	<560000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	560000	<560000	U
49	Diphenylamine	122-39-4	µg/kg	560000	<560000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	560000	<560000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	560000	<560000	U
52	Fluoranthene	206-44-0	µg/kg	560000	1900000	
53	Fluorene	86-73-7	µg/kg	560000	597000	
54	Hexachlorobenzene	118-74-1	µg/kg	560000	<560000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	560000	<560000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	560000	<560000	U
57	Hexachloroethane	67-72-1	µg/kg	560000	<560000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560000	160000	J
59	Isophorone	78-59-1	µg/kg	560000	<560000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	560000	<560000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	560000	<560000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	560000	722000	
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560000	71000	J
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560000	<560000	U
65	Naphthalene	91-20-3	µg/kg	560000	1400000	
66	1-Naphthylamine	134-32-7	µg/kg	560000	<560000	U
67	2-Naphthylamine	91-59-8	µg/kg	560000	<560000	U
68	2-Nitroaniline	88-74-4	µg/kg	2800000	<2800000	U
69	3-Nitroaniline	99-09-2	µg/kg	2800000	<2800000	U
70	4-Nitroaniline	100-01-6	µg/kg	2800000	<2800000	U
71	Nitrobenzene	98-95-3	µg/kg	560000	<560000	U
72	2-Nitrophenol	88-75-5	µg/kg	560000	<560000	U
73	4-Nitrophenol	100-02-7	µg/kg	2800000	<2800000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560000	<560000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	560000	<560000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	560000	<560000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	560000	<560000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	560000	<560000	U
79	Pentachlorobenzene	608-93-5	µg/kg	2800000	<2800000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800000	<2800000	U
81	Phenacetin	62-44-2	µg/kg	560000	<560000	U
82	Phenanthrene	85-01-8	µg/kg	560000	3200000	
83	Phenol	108-95-2	µg/kg	560000	<560000	U
84	2-Picoline	109-06-8	µg/kg	1100000	<1100000	U
85	Pronamide	23950-58-5	µg/kg	560000	<560000	U
86	Pyrene	129-00-0	µg/kg	560000	1300000	
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	560000	<560000	U
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	560000	<560000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560000	<560000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	560000	<560000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	560000	< 560000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	120	
2	2-Fluorophenol	367-12-4		25-120	27	
3	Nitrobenzene-d5	4165-60-0		23-119	100	
4	Phenol-d5	4165-62-2		25-112	67	
5	Terphenyl-d14	1718-51-0		19-136	200	
6	2,4,6-Tribromophenol	118-79-6		19-121	0	
# of out-of-control					3	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	123	
2	Chrysene-d12	1719-03-5		50-200	158	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	96	
4	Naphthalene-d8	1146-65-2		50-200	111	
5	Perylene-d12	1520-96-3		50-200	127	
6	Phenanthrene-d10	1517-22-2		50-200	122	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/16/98

16128

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-6	Received Date:	06/18/98
Sample ID:	**98SY-MW4C-B-0**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: M
Anal. Method:	8270C	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2849	Prep. No:	1 of 1	Anal. Time:	20:31
Data File Name:	3473-06A	Sample Amount:	12.0 g	Dilution Factor:	1000
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560000	1200000	J
2	Acenaphthylene	208-96-8	µg/kg	560000	160000	J
3	Acetophenone	98-86-2	µg/kg	560000	< 560000	U
4	4-Aminobiphenyl	92-67-1	µg/kg	560000	< 560000	U
5	Aniline	62-53-3	µg/kg	560000	< 560000	U
6	Anthracene	120-12-7	µg/kg	560000	1400000	
7	Benz(a)anthracene	56-55-3	µg/kg	560000	1100000	
8	Benzidine	92-87-5	µg/kg	1100000	< 1100000	U
9	Benzo(a)pyrene	50-32-8	µg/kg	560000	578000	
10	Benzo(b)fluoranthene	205-99-2	µg/kg	560000	746000	
11	Benzo(g,h,i)perylene	191-24-2	µg/kg	560000	180000	J J
12	Benzo(k)fluoranthene	207-08-9	µg/kg	560000	270000	J J
13	Benzoic acid	65-85-0	µg/kg	2800000	< 2800000	U
14	Benzyl alcohol	100-51-6	µg/kg	1100000	< 1100000	U
15	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560000	< 560000	U
16	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560000	< 560000	U
17	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560000	< 560000	U
18	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560000	< 560000	U
19	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560000	< 560000	U
20	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560000	< 560000	U
21	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100000	< 1100000	U
22	4-Chloroaniline	106-47-8	µg/kg	1100000	< 1100000	U
23	1-Chloronaphthalene	90-13-1	µg/kg	560000	< 560000	U
24	2-Chloronaphthalene	91-58-7	µg/kg	560000	< 560000	U
25	2-Chlorophenol	95-57-8	µg/kg	560000	< 560000	U
26	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560000	< 560000	U
27	Chrysene	218-01-9	µg/kg	560000	852000	J
28	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560000	< 560000	U
29	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560000	< 560000	U
30	Dibenz(a,h)anthracene	53-70-3	µg/kg	560000	160000	J J
31	Dibenz(a,j)acridine	224-42-0	µg/kg	560000	< 560000	U
32	Dibenzofuran	132-64-9	µg/kg	560000	1600000	J
33	1,2-Dichlorobenzene	95-50-1	µg/kg	560000	< 560000	U
34	1,3-Dichlorobenzene	541-73-1	µg/kg	560000	< 560000	U
35	1,4-Dichlorobenzene	106-46-7	µg/kg	560000	< 560000	U
36	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100000	< 1100000	U
37	2,4-Dichlorophenol	120-83-2	µg/kg	560000	< 560000	U
38	2,6-Dichlorophenol	87-65-0	µg/kg	560000	< 560000	U
39	Diethyl phthalate (DEP)	84-66-2	µg/kg	560000	< 560000	U
40	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560000	< 560000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	p-Dimethylaminoazobenzene	60-11-7	µg/kg	560000	< 560000	U
42	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/kg	560000	< 560000	U
43	2,4-Dimethylphenol	105-67-9	µg/kg	560000	120000	J
44	α, α-Dimethylphenylamine	122-09-8	µg/kg	2800000	< 2800000	U
45	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800000	< 2800000	U
46	2,4-Dinitrophenol	51-28-5	µg/kg	2800000	< 2800000	U
47	2,4-Dinitrotoluene	121-14-2	µg/kg	560000	< 560000	U
48	2,6-Dinitrotoluene	606-20-2	µg/kg	560000	< 560000	U
49	Diphenylamine	122-39-4	µg/kg	560000	< 560000	U
50	1,2-Diphenylhydrazine	122-66-7	µg/kg	560000	< 560000	U
51	Ethyl methanesulfonate	62-50-0	µg/kg	560000	< 560000	U
52	Fluoranthene	206-44-0	µg/kg	560000	3000000	
53	Fluorene	86-73-7	µg/kg	560000	1070000	J
54	Hexachlorobenzene	118-74-1	µg/kg	560000	< 560000	U
55	Hexachlorobutadiene	87-68-3	µg/kg	560000	< 560000	U
56	Hexachlorocyclopentadiene	77-47-4	µg/kg	560000	< 560000	U
57	Hexachloroethane	67-72-1	µg/kg	560000	< 560000	U
58	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560000	210000	J
59	Isophorone	78-59-1	µg/kg	560000	< 560000	U
60	Methyl methanesulfonate	66-27-3	µg/kg	560000	< 560000	U
61	3-Methylcholanthrene	56-49-5	µg/kg	560000	< 560000	U
62	2-Methylnaphthalene	91-57-6	µg/kg	560000	1200000	J
63	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560000	350000	J
64	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560000	180000	J
65	Naphthalene	91-20-3	µg/kg	560000	1800000	J
66	1-Naphthylamine	134-32-7	µg/kg	560000	< 560000	U
67	2-Naphthylamine	91-59-8	µg/kg	560000	< 560000	U
68	2-Nitroaniline	88-74-4	µg/kg	2800000	< 2800000	U
69	3-Nitroaniline	99-09-2	µg/kg	2800000	< 2800000	U
70	4-Nitroaniline	100-01-6	µg/kg	2800000	< 2800000	U
71	Nitrobenzene	98-95-3	µg/kg	560000	< 560000	U
72	2-Nitrophenol	88-75-5	µg/kg	560000	< 560000	U
73	4-Nitrophenol	100-02-7	µg/kg	2800000	< 2800000	U
74	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560000	< 560000	U
75	N-Nitroso-di-n-butylamine	924-16-3	µg/kg	560000	< 560000	U
76	N-Nitrosodimethylamine	62-75-9	µg/kg	560000	< 560000	U
77	N-Nitrosodiphenylamine	86-30-6	µg/kg	560000	< 560000	U
78	N-Nitrosopiperidine	100-75-4	µg/kg	560000	< 560000	U
79	Pentachlorobenzene	608-93-5	µg/kg	2800000	< 2800000	U
80	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800000	< 2800000	U
81	Phenacetin	62-44-2	µg/kg	560000	< 560000	U
82	Phenanthrene	85-01-8	µg/kg	560000	5500000	
83	Phenol	108-95-2	µg/kg	560000	70000	J
84	2-Picoline	109-06-8	µg/kg	1100000	< 1100000	U
85	Pronamide	23950-58-5	µg/kg	560000	< 560000	U
86	Pyrene	129-00-0	µg/kg	560000	2200000	
87	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/kg	560000	< 560000	U
88	2,3,4,6-Tetrachloroephenol	58-90-2	µg/kg	560000	< 560000	U
89	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560000	< 560000	U
90	2,4,5-Trichlorophenol	95-95-4	µg/kg	560000	< 560000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-Trichlorophenol	88-06-2	µg/kg	560000	< 560000	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-Fluorobiphenyl	321-60-8		30-114	199	
2	2-Fluorophenol	367-12-4		25-120	67	
3	Nitrobenzene-d5	4165-60-0		23-119	159	
4	Phenol-d5	4165-62-2		25-112	120	
5	Terphenyl-d14	1718-51-0		19-136	457	
6	2,4,6-Tribromophenol	118-79-6		19-121	120	
# of out-of-control					4	
Internal Standard				Control Limit, %	IS Rec.%	
1	Acenaphthene-d10	15067-26-2		50-200	106	
2	Chrysene-d12	1719-03-5		50-200	126	
3	1,4-Dichlorobenzene-d4	3855-82-1		50-200	83	
4	Naphthalene-d8	1146-65-2		50-200	97	
5	Perylene-d12	1520-96-3		50-200	100	
6	Phenanthrene-d10	1517-22-2		50-200	106	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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16149

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 2, 1998

Matrix: Wood

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M2Wa-B-0**
98SY-M4Wa-B-0
98SY-M4Wb-B-0
98SY-MW4c-B-0
98SY-M4Wa-B-0MS
98SY-M4Wa-B-0DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 wood samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Barium Beryllium Cobalt Copper Thallium Molybdenum	0.9 ug/L 0.2 ug/L 0.5 ug/L 2.9 ug/L 1.9 ug/L 1.3 ug/L	All samples in SDG 98-3473
CCB1	Barium Beryllium Cobalt Copper Thallium Zinc Molybdenum	1.1 ug/L 0.2 ug/L 0.5 ug/L 35.9 ug/L 2.1 ug/L 0.9 ug/L 1.2 ug/L	All samples in SDG 98-3473
CCB2	Antimony Barium Beryllium Cobalt Thallium Zinc Molybdenum	2.5 ug/L 2.5 ug/L 0.3 ug/L 0.6 ug/L 2.1 ug/L 1.0 ug/L 1.7 ug/L	All samples in SDG 98-3473
CCB3	Antimony Barium Copper Zinc Molybdenum	2.4 ug/L 1.1 ug/L -0.8 ug/L 7.1 ug/L 0.8 ug/L	All samples in SDG 98-3473

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Beryllium Cadmium Cobalt Copper Selenium	0.005 mg/Kg 0.006 mg/Kg 0.021 mg/Kg 0.052 mg/Kg -0.097 mg/Kg	All samples in SDG 98-3473

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
98SY-M4Wa-B-0MS (All samples in SDG 98-3473)	Antimony	52.4 (75-125)	J	A
98SY-M4Wa-B-0MS (All samples in SDG 98-3473)	Chromium Cobalt Lead	-30.3 (75-125) -10.0 (75-125) -187.0 (75-125)	J (all detects) R (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
98SY-M4Wa-B-0L	Silver Zinc	12.4 (≤10) 16.9 (≤10)	All samples in SDG 98-3473	J (all detects) J (all detects)	A

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0	98SY-MW4c-B-0			
Antimony	18.8	3.4	139 (≤35)	J	A
Arsenic	3.0	1.5	67 (≤35)	J	A
Barium	58.4	33.6	54 (≤35)	J	A
Cadmium	6.2	2.4	88 (≤35)	J	A
Chromium	269	50.7	137 (≤35)	J	A

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0	98SY-MW4c-B-0			
Cobalt	79.0	27.8	96 (≤35)	J	A
Copper	3340	418	156 (≤35)	J	A
Lead	668	168	120 (≤35)	J	A
Mercury	0.24	0.18	29 (≤35)	-	-
Nickel	236	89.5	90 (≤35)	J	A
Selenium	1.9	0.32	142 (≤35)	J	A
Silver	3.8	5.5	37 (≤35)	J	A
Vanadium	8.9	3.6	85 (≤35)	J	A
Zinc	1820	566	105 (≤35)	J	A
Molybdenum	33.2	11.9	94 (≤35)	J	A

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 98-3473

SDG	Sample	Analyte	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0** 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	Antimony	J	A	Matrix spike analysis (%R)
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0** 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	Chromium Cobalt Lead	J (all detects) R (all non-detects)	A	Matrix spike analysis (%R)
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0** 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	Silver Zinc	J (all detects) J (all detects)	A	ICP serial dilution (%D)
98-3473	98SY-M4Wa-B-0 98SY-MW4c-B-0	Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Selenium Silver Vanadium Zinc Molybdenum	J J J J J J J J J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs

Project No: 6210-014
Service ID: 983473
Lab Sample ID: 98-3473-2
Sample Matrix Soil

Collection Date: 06/18/98
Collected by: FP/BB
Received Date: 06/18/98
Moisture %: 8.7

Sample ID: **98SY-M1WA-B-0**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	8.2	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	2.5		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	50.4		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	<0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	9.7		P		98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.55	218	J	P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.55	5.1	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.55	455		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.22	281	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.26		CV		98M1642D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.22	8.3		P		98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	99.2		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.55	0.48	B	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.55	3.2	J	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.5	<0.082	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.55	6.7		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.55	1050	J	P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	1.2	~~B~~ J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.32	0.14	B	P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	34.9		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.21	<0.005	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.21	17.3		P		98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.53	13.3	J	P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.53	1.6	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.53	111		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.21	65.8	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.21	1.0		CV		98M1642D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.21	3.7		P		98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.32	8.5		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.53	<0.080	U	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.53	0.88	J	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.3	<0.080	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.53	3.1		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.53	201	J	P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	18.8	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.33	3.0	J	P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	58.4	J	P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	< 0.006	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	6.2	J	P		98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.56	269	J	P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.56	79.0	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.56	3340	J	P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.22	668	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.24		CV		98M1642D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.22	33.2	J	P		98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.33	236	J	P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.56	1.9	J	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.56	3.8	J	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.6	< 0.084	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.56	8.9	J	P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.56	1820	J	P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.82	BJ	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.34	0.64		P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	11.5		P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.23	<0.006	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.23	2.1		P		98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.56	13.8	J	P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.56	14.4	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.56	170		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.23	91.6	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.23	0.30		CV		98M1642D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.23	4.6		P		98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.34	23.8		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.56	<0.085	U	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.56	0.40	BJ	P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.6	<0.085	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.56	1.1		P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.56	471	J	P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: Long Beach Naval Shipyard AOCs
Project No: 6210-014
Service ID: 983473
Lab Sample ID: 98-3473-6
Collection Date: 06/18/98
Collected by: FP/BB
Received Date: 06/18/98
Sample ID: **98SY-MW4C-B-0**
Sample Matrix Soil
Moisture %: 10.6
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	3.4	J	P	N	98M1636M	06/23/98	06/23/98	1	6010
Arsenic	7440-38-2	mg/kg	0.34	1.5	J	P		98M1636M	06/23/98	06/23/98	1	6010
Barium	7440-39-3	mg/kg	1.1	33.6	J	P		98M1636M	06/23/98	06/23/98	1	6010
Beryllium	7440-41-7	mg/kg	0.22	< 0.006	U	P		98M1636M	06/23/98	06/23/98	1	6010
Cadmium	7440-43-9	mg/kg	0.22	2.4	J	P		98M1636M	06/23/98	06/23/98	1	6010
Chromium	7440-47-3	mg/kg	0.56	50.7		P	N*	98M1636M	06/23/98	06/23/98	1	6010
Cobalt	7440-48-4	mg/kg	0.56	27.8		P	N	98M1636M	06/23/98	06/23/98	1	6010
Copper	7440-50-8	mg/kg	0.56	418		P		98M1636M	06/23/98	06/23/98	1	6010
Lead	7439-92-1	mg/kg	0.22	168		P	N	98M1636M	06/23/98	06/23/98	1	6010
Mercury	7439-97-6	mg/kg	0.22	0.18	B	CV		98M1642D	06/23/98	06/24/98	1	7471
Molybdenum	7439-98-7	mg/kg	0.22	11.9	J	P		98M1636M	06/23/98	06/23/98	1	6010
Nickel	7440-02-0	mg/kg	0.34	89.5		P	*	98M1636M	06/23/98	06/23/98	1	6010
Selenium	7782-49-2	mg/kg	0.56	0.32	B	P		98M1636M	06/23/98	06/23/98	1	6010
Silver	7440-22-4	mg/kg	0.56	5.5		P	E	98M1636M	06/23/98	06/23/98	1	6010
Thallium	7440-28-0	mg/kg	5.6	< 0.084	U	P		98M1636M	06/23/98	06/23/98	1	6010
Vanadium	7440-62-2	mg/kg	0.56	3.6	J	P	*	98M1636M	06/23/98	06/23/98	1	6010
Zinc	7440-66-6	mg/kg	0.56	566	J	P	E	98M1636M	06/23/98	06/23/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 3, 1998

Matrix: Wood

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M2Wa-B-0**
98SY-M4Wa-B-0
98SY-M4Wb-B-0
98SY-MW4c-B-0

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 5 wood samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M1PA-S-0MS/MSD (All samples in SDG 98-3473)	Aroclor-1016 Aroclor-1260	- 202 (30-129)	- -	60 (≤37) 68 (≤37)	J J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0	98SY-MW4c-B-0			
Aroclor-1260	280U	6560	200 (≤35)	J	A

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 98-3473

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0** 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0	Aroclor-1016 Aroclor-1260	J J	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
98-3473	98SY-M4Wa-B-0 98SY-MW4c-B-0	Aroclor-1260	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	11:49
Data File Name:	3473.002	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	550	< 550	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	550	< 550	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	550	< 550	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	550	< 550	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	270	< 270	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	270	980	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	158
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	74
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a 9998

16324

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	12:15
Data File Name:	3473.003	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	530	< 530	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	530	< 530	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	530	< 530	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	530	< 530	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	270	< 270	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	270	2000	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	390
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	120
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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16328

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	12:40
Data File Name:	3473.004	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	560	< 560	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	560	< 560	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	560	< 560	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	560	< 560	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	280	< 280	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	280	< 280	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	3070
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	543
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

19998

16333

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	06:15
Data File Name:	3473.005	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	560	< 560	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	560	< 560	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	560	< 560	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	560	< 560	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	280	< 280	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	280	< 280	~~U~~ UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	2000
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	649
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

19998

16337

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-6	Received Date:	06/18/98
Sample ID:	**98SY-MW4C-B-0**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: S
Anal. Method:	8082	Prep. Date:	06/25/98	Anal. Date:	06/26/98
Batch No:	98G2837	Prep. No:	1 of 1	Anal. Time:	11:24
Data File Name:	3473.006	Sample Amount:	30.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	560	< 560	~~U~~ UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1100	< 1100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	560	< 560	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	560	< 560	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	560	< 560	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	280	< 280	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	280	6560	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-137	1130
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	30-149	309
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

ug998

16341

LDC Report# 3048E7

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 4, 1998

Matrix: Wood

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M2Wa-B-0
98SY-M4Wa-B-0
98SY-M4Wb-B-0**
98SY-MW4c-B-0
98SY-M4Wa-B-0MS
98SY-M4Wa-B-0MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 wood samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
98G2797-MB-01	6/24/98	TPH as gasoline	0.04 mg/Kg	98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-MW4c-B-0
98G2860-MB-01	6/27/98	TPH as gasoline	0.03 mg/Kg	98SY-M1Wa-B-0 98SY-M4Wb-B-0**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-M1Wa-B-0 98SY-M4Wb-B-0**	TPH as gasoline	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M4Wa-B-0MS/MSD (98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-MW4c-B-0)	TPH as gasoline	-	-	200 (≤33)	J	A

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0	98SY-MW4c-B-0			
TPH as gasoline	35	13	92 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 98-3473

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M4Wb-B-0**	TPH as gasoline	None	P	Matrix spike/Matrix spike duplicates
98-3473	98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-MW4c-B-0	TPH as gasoline	J	A	Matrix spike/Matrix spike duplicates (RPD)
98-3473	98SY-M4Wa-B-0 98SY-MW4c-B-0	TPH as gasoline	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/28/98	Anal. Date:	06/28/98
Batch No:	98G2860	Prep. No:	–	Anal. Time:	10:35
Data File Name:	3473.102	Sample Amount:	4.0 g	Dilution Factor:	2150
Methanol Vol.	20. mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	2400	8400 [a]	
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (BFB)	460-00-4		60-123	110	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Not a typical gasoline pattern, sample contained high concentration in 8260 anlytes.

N 9949

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/24/98	Anal. Date:	06/24/98
Batch No:	98G2797	Prep. No:	–	Anal. Time:	18:01
Data File Name:	3473.003	Sample Amount:	1 g	Dilution Factor:	5
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	5.3	2 [a]	~~Y~~ J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	38
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Not a typical gasoline pattern, sample contained high concentration in 8260 anlytes.

u 4498

016506

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/24/98	Anal. Date:	06/24/98
Batch No:	98G2797	Prep. No:	-	Anal. Time:	17:36
Data File Name:	3473.004	Sample Amount:	1 g	Dilution Factor:	5
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	5.6	35 [a]	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	50
# of out-of-control			1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Not a typical gasoline pattern, sample contained high concentration in 8260 anlytes.

u 9498

C016508

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	06/28/98	Anal. Date:	06/28/98
Batch No:	98G2860	Prep. No:	-	Anal. Time:	11:00
Data File Name:	3473.105	Sample Amount:	4.0 g	Dilution Factor:	2150
Methanol Vol.	10. mL				
Test Level:	Medium	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	2400	1900 [a]	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	60-123	109
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Not a typical gasoline pattern, sample contained high concentration in 8260 anlytes.

7/9/98

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-6	Received Date:	06/18/98
Sample ID:	**98SY-MW4C-B-0**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	06/24/98	Anal. Date:	06/24/98
Batch No:	98G2797	Prep. No:	–	Anal. Time:	18:25
Data File Name:	3473.006	Sample Amount:	1 g	Dilution Factor:	5
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	5.6	13 [a]	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB) 460-00-4	60-123	104
# of out-of-control			0

[a] Not a typical gasoline pattern, sample contained high concentration in 8260 anlytes.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/9/98

C016512

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: October 14, 1998

Matrix: Wood

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M2Wa-B-0
98SY-M4Wa-B-0**
98SY-M4Wb-B-0
98SY-MW4c-B-0
98SY-M4Wa-B-0MS
98SY-M4Wa-B-0MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 wood samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

*

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-M4Wa-B-0MS/MSD (All samples in SDG 98-3473)	TPH as extractables	-	-	200 (≤43)	J	A

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 98SY-M4Wa-B-0** and 98SY-MW4c-B-0 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0**	98SY-MW4c-B-0			
TPH as diesel	99000	71000	33 (≤35)	-	-
TPH as motor oil	190000	150000	24 (≤35)	-	-

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 98-3473
*

SDG	Sample	Compound	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0** 98SY-M4Wb-B-0 98SY-MW4c-B-0	TPH as extractables	J	A	Matrix spike/Matrix spike duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-2	Received Date:	06/18/98
Sample ID:	**98SY-M1WA-B-0**	Sample Matrix	Soil	Moisture %:	8.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	07/02/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	12:32
Data File Name:	3473.002	Sample Amount:	20.0 g	Dilution Factor:	500
Extract Vol.	10. mL				

≠	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	5500	41000 [a]	J
2	Motor Oil		mg/kg	5500	62000 [a]	J

Surrogates			Control Limit. %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	132000
≠ of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
[a] Mixture of compound in diesel/ motor oil range.

E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7/4/98

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-3	Received Date:	06/18/98
Sample ID:	**98SY-M2WA-B-0**	Sample Matrix	Soil	Moisture %:	6.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	21:37
Data File Name:	3473.203	Sample Amount:	20.0 g	Dilution Factor:	2500
Extract Vol.	10. mL				

≠	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	27000	35000 [a]	J
2	Motor Oil		mg/kg	27000	230000 [a]	J

Surrogates			Control Limit. %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	239000
≠ of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Mixture of compound in diesel/ motor oil range.

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-4	Received Date:	06/18/98
Sample ID:	**98SY-M4WA-B-0**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	22:27
Data File Name:	3473.204	Sample Amount:	20.0 g	Dilution Factor:	2500
Extract Vol.	10. mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	28000	99000 [a]	J
2	Motor Oil		mg/kg	28000	190000	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	348000
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Mixture of compound in diesel/ motor oil range.

44491

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-5	Received Date:	06/18/98
Sample ID:	**98SY-M4WB-B-0**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	23:42
Data File Name:	3473.105	Sample Amount:	20.0 g	Dilution Factor:	5000
Extract Vol.	10. mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	56000	650000 [a]	J
2	Motor Oil		mg/kg	56000	320000	J
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-145	782000	
# of out-of-control					1	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

[a] Mixture of compound in diesel/ motor oil range.

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	06/18/98
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB
		Lab Sample ID:	98-3473-6	Received Date:	06/18/98
Sample ID:	**98SY-MW4C-B-0**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	06/25/98	Anal. Date:	06/30/98
Batch No:	98G2844	Prep. No:	1 of 1	Anal. Time:	22:02
Data File Name:	3473.206	Sample Amount:	20.0 g	Dilution Factor:	2500
Extract Vol.	10. mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	28000	71000	J
2	Motor Oil		mg/kg	28000	150000	J

Surrogates			Control Limit. %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-145	262000
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

LQ4Q8

16598

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 2, 1998

Matrix: Wood

Parameters: Cyanide

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0**
98SY-M2Wa-B-0
98SY-M4Wa-B-0
98SY-M4Wb-B-0
98SY-MW4c-B-0

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 wood samples listed on the cover sheet. The analyses were per EPA Method 335.2 for Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0 were identified as field duplicates. No cyanide was detected in any of the samples.

Long Beach Naval Shipyard
Cyanide - Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Cyanide - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Anal. Method	335.2
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3473-2	98SY-M1WA-B-0	Soil	06/18/98	06/18/98	06/25/98	98W3729	mg/kg	2.7	<2.7	U
98-3473-3	98SY-M2WA-B-0	Soil	06/18/98	06/18/98	06/25/98	98W3729	mg/kg	2.7	<2.7	U
98-3473-4	98SY-M4WA-B-0	Soil	06/18/98	06/18/98	06/25/98	98W3729	mg/kg	2.8	<2.8	U
98-3473-5	98SY-M4WB-B-0	Soil	06/18/98	06/18/98	06/25/98	98W3729	mg/kg	2.8	<2.8	U
98-3473-6	98SY-MW4C-B-0	Soil	06/18/98	06/18/98	06/25/98	98W3729	mg/kg	2.8	<2.8	U
98W3729-MB-01		Soil	06/25/98	06/25/98	06/25/98	98W3729	mg/kg	2.5	<2.5	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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016908

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: June 18, 1998

LDC Report Date: September 2, 1998

Matrix: Wood

Parameters: pH

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 98-3473

Sample Identification

98SY-M1Wa-B-0
98SY-M2Wa-B-0
98SY-M4Wa-B-0
98SY-M4Wb-B-0
98SY-MW4c-B-0**

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 wood samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 98-3473	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 98SY-M4Wa-B-0 and 98SY-MW4c-B-0** were identified as field duplicates. The results are listed as follows:

Compound	Concentration (units)		RPD (Limits)	Flag	A or P
	98SY-M4Wa-B-0	98SY-MW4c-B-0**			
pH	7.90	7.62	4 (≤35)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 98-3473

SDG	Sample	Analyte	Flag	A or P	Reason
98-3473	98SY-M1Wa-B-0 98SY-M2Wa-B-0 98SY-M4Wa-B-0 98SY-M4Wb-B-0 98SY-MW4c-B-0**	pH	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 98-3473

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Anal. Method	9040
Project ID:	Long Beach Naval Shipyard AOCs	Service ID:	983473	Collected by:	FP/BB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-3473-2	98SY-M1WA-B-0	Soil	06/18/98	06/18/98	06/22/98	98W3674	pH unit	0.01	8.12	
98-3473-3	98SY-M2WA-B-0	Soil	06/18/98	06/18/98	06/22/98	98W3674	pH unit	0.01	7.99	
98-3473-4	98SY-M4WA-B-0	Soil	06/18/98	06/18/98	06/22/98	98W3674	pH unit	0.01	7.90	
98-3473-5	98SY-M4WB-B-0	Soil	06/18/98	06/18/98	06/22/98	98W3674	pH unit	0.01	8.01	
98-3473-6	98SY-MW4C-B-0	Soil	06/18/98	06/18/98	06/22/98	98W3674	pH unit	0.01	7.62	
98W3674-MB-01		Soil	06/22/98	06/22/98	06/22/98	98W3674	pH unit	0.01	6.57	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Cooler 1-06-10-98

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Contact: Dave Bjostad Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St, Suite 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas office

Project Name/Code Long Beach Naval Shipyard NOG Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: See Below

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOC 8260B	SVOC 8270C	METALS TTLC17	PCB 8082	CN	TPH-d,g 8015m	Dioxins	Remarks
98SY-M1	Wa-B-0	6/18/98	0900	wood	4°C	2	X	X	X	X	X	X		
98SY-M4	Wa-B-0	6/18/98	0830	wood	4°C	6	X	X	X	X	X	X		MS/MSD
98SY-M4	Wa-B-0	6/18/98	0830	wood	4°C	1							X	
98SY-M4	Wb-B-0	6/18/98	0815	wood	4°C	2	X	X	X	X	X	X		
98SY-M2	Wa-B-0	6/18/98	0930	wood	4°C	2	X	X	X	X	X	X		
FP 98SY-MF4	Wa-B-0	6/18/98	0940	wood	4°C	2	X	X	X	X	X	X		
98SY-BT1	m-W-10	6/18/98	0950	water	4°C	2	X							
98SY-MW4	c-B-0	6/18/98	0940	wood	4°C	2	X	X	X	X	X	X		

Frank Pan

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Frank Pan Date/Time 6/18/98 / 1200 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: December 15, 1998

LDC Report Date: April 12, 1999

Matrix: Wood

Parameters: Dioxins/Dibenzofurans

Validation Level: NFESC Level C

Laboratory: Triangle Laboratories, Inc.

Sample Delivery Group (SDG): 47515A

Sample Identification

98SY-MW4Wa-B-0
98SY-MW4Wa-B-0MS
98SY-MW4Wa-B-0MSD

Introduction

This data review covers 3 wood samples listed on the cover sheet including dilutions and reanalysis, as applicable. The analyses were per EPA SW 846 Method 8280A for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at the required daily frequency with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-MW4Wa-B-0	All TCL compounds	Chromatographic resolution was verified outside the 12-hour shift.	Chromatographic resolution must be verified at the beginning of each 12-hour shift.	None	P

Retention time windows were established for all homologues. The chromatographic resolution between ^{13}C-2,3,7,8-TCDD and ^{13}C-1,2,3,4-TCDD was less than or equal to 25%.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 30.0% .

The ion abundance ratios for all PCDDs and PCDFs were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following

exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
TLI Solid Blank	12/29/98	Total TCDD Total TCDF	1.6 ppb 0.04 ppb	All samples in SDG 47515A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-MW4Wa-B-0	Total TCDD Total TCDF	2.0 ppb 5.9 ppb	2.0U ppb 5.9U ppb

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within the QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
98SY-MW4Wa-B-0MS/MSD (All samples in SDG 47515A)	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF OCDF	425 (50-150) 184 (50-150) 333 (50-150)	- - -	98.2 (≤50) 55.6 (≤50) 103 (≤50)	J	A

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. The percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-MW4Wa-B-0	OCDD Total HpCDD	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	P

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 47515A

SDG	Sample	Compound	Flag	A or P	Reason
47515A	98SY-MW4Wa-B-0	All TCL compounds	None	P	GC/MS instrument performance check
47515A	98SY-MW4Wa-B-0	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF OCDF	J	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
47515A	98SY-MW4Wa-B-0	OCDD Total HpCDD	J (all detects) J (all detects)	P	Compound quantitation and CRQLs

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 47515A

SDG	Sample	Compound	Modified Final Concentration	A or P
47515A	98SY-MW4Wa-B-0	Total TCDD Total TCDF	2.0U ppb 5.9U ppb	A

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 47515A

No Sample Data Qualified in this SDG

Applied P & CH Laboratory

TLI Project: 47515A — Method 8280-A PCDD/PCDF Analysis (b)
Client Sample: 98SY-M4Wa-B-0 — Analysis File: VJ65800

Client Project:	Long Beach Ship Yard				
Sample Matrix:	SOLID	Date Received:	12/21/98	Spike File:	SP828A50
TLI ID:	226-21-1A	Date Extracted:	12/29/98	ICal:	V85D07A
		Date Analyzed:	01/07/99	ConCal:	VJ65600
Sample Size:	10.280 g	Dilution Factor:	n/a	% Moisture:	7.1
Dry Weight:	9.550 g	Blank File:	VJ65700	% Lipid:	n/a
GC Column:	DB-5	Analyst:	LG	% Solids:	92.9

Analytes	Conc. (ppb)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.02				—
1,2,3,7,8-PeCDD	ND	0.04				—
1,2,3,4,7,8-HxCDD	ND	0.04				—
1,2,3,6,7,8-HxCDD	0.46			1.39	29:57	J
1,2,3,7,8,9-HxCDD	ND	0.04				—
1,2,3,4,6,7,8-HpCDD	9.9			1.06	32:35	J
1,2,3,4,6,7,8,9-OCDD	111			0.90	34:57	J
2,3,7,8-TCDF	ND	0.02				—
1,2,3,7,8-PeCDF	ND	0.02				—
2,3,4,7,8-PeCDF	ND	0.02				—
1,2,3,4,7,8-HxCDF	0.07			1.25	29:11	J
1,2,3,6,7,8-HxCDF	ND	0.02				—
2,3,4,6,7,8-HxCDF	ND	0.02				—
1,2,3,7,8,9-HxCDF	ND	0.03				—
1,2,3,4,6,7,8-HpCDF	1.6			1.02	31:48	J
1,2,3,4,7,8,9-HpCDF	ND	0.03				—
1,2,3,4,6,7,8,9-OCDF	6.3			0.89	35:03	J

Totals	Conc. (ppb)	Number	DL	EMPC	Flags
Total TCDD		0		2.0	U
Total PeCDD	ND	0	0.04		—
Total HxCDD	3.6	4			—
Total HpCDD	24.6	2			J
Total TCDF		0		5.9	U
Total PeCDF	0.14	1		1.5	—
Total HxCDF	2.3	4			—
Total HpCDF	7.1	2			—

EMPC = Estimated Maximum Possible Concentration

41695

828A_PSR v1.03, LARS 6.12.12

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801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:33 01/12/99

LDC #: 3715K21 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-9-99

SDG #: 47515A ____EPA Level III _X_NFESC Level C Page: 1 of 1

Laboratory: Triangle Laboratories, Inc. Reviewer: MG

2nd Reviewer: SS

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12-15-98
II.	GC/MS Instrument performance check	SW A81	
III.	Initial calibration	A	
IV.	Routine calibration	A	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	LCS/LCSD
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation and CRQLs	SW ~~N~~	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ALL WOOD

1	98SY-MW4Wa-B-0	11		21	
2	98SY-MW4Wa-B-0MS	12		22	
3	98SY-MW4Wa-B-0MSD	13		23	
4	TLI SOLID BLANK	14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

Notes: _____

LDC #: 3[illegible]5K21
SDG #: 4-1515BA

VALIDATION FI[illegible]IGS WORKSHEET
GC/MS Instrument Performance Check

[illegible]: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were the retention time windows established for all homologues?
(Y) N N/A Was the chromatographic resolution between ^{13}C-2,3,7,8-TCDD and ^{13}C-1,2,3,4-TCDD $\leq$ 25% ?
(Y) N N/A Were the ion abundance ratio criteria met for all PCDDs and PCDFs?
Y (N) N/A Was the GC column performance checked for resolution and peak shape daily?
(Y) N N/A Was the valley resolution between 1,2,3,4,7,8-HxCDD and 1,2,3,6,7,8-HxCDD isomers $\leq$50% ?

#	Laboratory ID	Finding	Associated Samples	Qualifications
	1	Chromatographic resolution was verified outside the 12-hour shift.	1	NONE/P

	PCDDs	Selected Ions (m/z)	Ion Abundace Ratio		PCDFs	Selected Ions (m/z)	Ion Abundace Ratio
A.	Tetra-	320/322	0.65-0.89	F.	Tetra-	304/306	0.65-0.89
B.	Penta-	358/356	0.55-0.75	G.	Penta-	342/240	0.55-0.75
C.	Hexa-	392/390	0.69-0.93	H.	Hexa-	376/374	0.69-0.93
D.	Hepta-	426/424	0.83-1.12	I.	Hepta-	410/408	0.83-1.12
E.	Octa-	458/460	0.75-1.01	J.	Octa-	442/444	0.75-1.01

LDC #: 3715K21
SDG #: 47515A

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MG
2nd Reviewer: SS

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all samples associated with a method blank?
(Y) N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
Y (N) N/A Was method blank contamination less < CRQL for all target compounds?
Y N (N/A) Was the contaminant peak signal < 2% of the associated internal standard?

Blank extraction date: 12-29-98 **Blank analysis date:** 1-7-99

Conc. units: ppb

Assoc'd samples: ALL

Compound	Blank ID	Sample Identification								
TLI SOLID BLANK	1									
R	(EMPC) 1.6	(EMPC) 2.0 U SI								
V	(EMPC) 0.04	(EMPC) 5.9								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 37 21
SDG #: 47515A

VALIDATION FIN GS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

e: 1 of 1
Reviewer: SC MG
2nd Reviewer: SC

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? (Not required)
Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD ~~%R (Limits)~~ RPD	RPD (Limits)	Associated Samples	Qualifications
		2/3	F	425 (50-150)	98.2 (≤50)	( )	All	J/~~UJ~~/A
			G	1940 ( )	182 ( )	( )		
			O	184 ( )	55.6 ( )	( )		
			Q	333 ( )	103 ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				G no qual	(2R) calc > 2x spk amt			
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	PCDDs	% Recovery (Soil)	RPD (Soil)	% Recovery (Water)	RPD (Water)		PCDFs	% Recovery (Soil)	RPD (Soil)	% Recovery (Water)	RPD (Water)
A.	Tetra-	60-140		60-140		F.	Tetra-	60-140		60-140	
B.	Penta-	40-140		40-140		G.	Penta-	40-140		40-140	
C.	Hexa-	40-140		40-140		H.	Hexa-	40-140		40-140	
D.	Hepta-	40-140		40-140		I.	Hepta-	40-140		40-140	
E.	Octa-	40-140		40-140		J.	Octa-	40-140		40-140	

LDC #: 3715K21
SDG #: 47515A

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: MG
2nd Reviewer: SA

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N (N/A) Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N (N/A) Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
1		1	G EXCEEDS CALIBRATION RANGE	1	~~J/UJ~~/P
			U ↓		↓ Jdet/P

Comments: See sample calculation verification worksheet for recalculations

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: December 15, 1998

LDC Report Date: April 12, 1999

Matrix: Soil

Parameters: Dioxins/Dibenzofurans

Validation Level: NFESC Level C

Laboratory: Triangle Laboratories, Inc.

Sample Delivery Group (SDG): 47515B

Sample Identification

98SY-T10d-S-0

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis, as applicable. The analyses were per EPA SW 846 Method 8280A for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at the required daily frequency with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
98SY-T10d-S-0	All TCL compounds	Chromatographic resolution was verified outside the 12-hour shift.	Chromatographic resolution must be verified at the beginning of each 12-hour shift.	None	P

Retention time windows were established for all homologues. The chromatographic resolution between ^{13}C-2,3,7,8-TCDD and ^{13}C-1,2,3,4-TCDD was less than or equal to 25%.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 30.0% .

The ion abundance ratios for all PCDDs and PCDFs were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following

exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
TLI Blank	12/29/98	Total TCDD Total PeCDD	1.6 ppb 0.04 ppb	All samples in SDG 47515B

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
98SY-T10d-S-0	Total TCDD	1.8 ppb	1.8U ppb

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG 47515B	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. The percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 47515B

SDG	Sample	Compound	Flag	A or P	Reason
47515B	98SY-T10d-S-0	All TCL compounds	None	P	GC/MS instrument performance check
47515B	98SY-T10d-S-0	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 47515B

SDG	Sample	Compound	Modified Final Concentration	A or P
47515B	98SY-T10d-S-0	Total TCDD	1.8U ppb	A

Long Beach Naval Shipyard
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 47515B

No Sample Data Qualified in this SDG

Applied P & CH Laboratory

TLI Project: 47515B — Method 8280-A PCDD/PCDF Analysis (b)
Client Sample: 98SY-T10d-S-0 — Analysis File: VJ65400

Client Project:	Long Beach Ship Yard				
Sample Matrix:	SOIL	Date Received:	12/21/98	Spike File:	SP828A50
TLI ID:	226-21-2A	Date Extracted:	12/29/98	ICal:	V85D07A
		Date Analyzed:	01/06/99	ConCal:	VJ64000
Sample Size:	10.260 g	Dilution Factor:	n/a	% Moisture:	1.4
Dry Weight:	10.116 g	Blank File:		% Lipid:	n/a
GC Column:	DB-5	Analyst:	LG	% Solids:	98.6

Analytes	Conc. (ppb)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.02				
1,2,3,7,8-PeCDD	ND	0.04				
1,2,3,4,7,8-HxCDD	ND	0.04				
1,2,3,6,7,8-HxCDD	ND	0.03				
1,2,3,7,8,9-HxCDD	ND	0.04				
1,2,3,4,6,7,8-HpCDD	1.6			1.07	32:35	J
1,2,3,4,6,7,8,9-OCDD	21.8			0.83	34:56	J
2,3,7,8-TCDF	0.17			0.88	21:38	J
1,2,3,7,8-PeCDF	ND	0.02				
2,3,4,7,8-PeCDF	ND	0.02				
1,2,3,4,7,8-HxCDF	0.19			1.05	29:10	J
1,2,3,6,7,8-HxCDF	0.06			1.39	29:16	J
2,3,4,6,7,8-HxCDF	0.11			1.20	29:46	J
1,2,3,7,8,9-HxCDF	ND	0.02				
1,2,3,4,6,7,8-HpCDF	0.46			0.94	31:48	J
1,2,3,4,7,8,9-HpCDF	ND	0.03				
1,2,3,4,6,7,8,9-OCDF	1.1			0.87	35:03	J

Totals	Conc. (ppb)	Number	DL	EMPC	Flags
Total TCDD		0		1.8	U
Total PeCDD	ND	0	0.04		
Total HxCDD	0.22	1			
Total HpCDD	3.0	2			
Total TCDF	0.38	5			
Total PeCDF	0.42	3		0.58	
Total HxCDF	0.85	6			
Total HpCDF	1.2	2			

M41695

EMPC = Estimated Maximum Possible Concentration

828A_PSR v1.03, LARS 6.12.11

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Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:10 01/11/99

LDC #: 3715L21 **VALIDATION COMPLETENESS WORKSHEET** Date: 4-9-99

SDG #: 47515B ___EPA Level III X NFESC Level C Page: 1 of 1

Laboratory: Triangle Laboratories, Inc. Reviewer: MG

2nd Reviewer: SS

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method (8280) A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12-15-98
II.	GC/MS Instrument performance check	SW	
III.	Initial calibration	A	
IV.	Routine calibration	A	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	~~Not Required~~ Not Required per NFESC Level C
VII.	Laboratory control samples	A	LCS/LCSD
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation and CRQLs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	98SY-T10d-S-0	11		21	
2	TLI BLANK	12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

Notes: _____

LDC #: 3715L21
SDG #: 47515B

VALIDATION FINDINGS WORKSHEET

Reviewer: MG
2nd Reviewer: JB

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:

LDC #: 3715L21
SDG #: 47515B

VALIDATION FINDINGS WORKSHEET
GC/MS Instrument Performance Check

Reviewer: MG
2nd Reviewer: JK

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were the retention time windows established for all homologues?
(Y) N N/A Was the chromatographic resolution between ^{13}C-2,3,7,8-TCDD and ^{13}C-1,2,3,4-TCDD ≤ 25% ?
(Y) N N/A Were the ion abundance ratio criteria met for all PCDDs and PCDFs?
Y (N) N/A Was the GC column performance checked for resolution and peak shape daily?
(Y) N N/A Was the valley resolution between 1,2,3,4,7,8-HxCDD and 1,2,3,6,7,8-HxCDD isomers ≤50% ?

#	Laboratory ID	Finding	Associated Samples	Qualifications
	1	Chromatographic resolution was verified outside the 12-hour shift.	1	NONE/P

	PCDDs	Selected Ions (m/z)	Ion Abundace Ratio		PCDFs	Selected Ions (m/z)	Ion Abundace Ratio
A.	Tetra-	320/322	0.65-0.89	F.	Tetra-	304/306	0.65-0.89
B.	Penta-	358/356	0.55-0.75	G.	Penta-	342/240	0.55-0.75
C.	Hexa-	392/390	0.69-0.93	H.	Hexa-	376/374	0.69-0.93
D.	Hepta-	426/424	0.83-1.12	I.	Hepta-	410/408	0.83-1.12
E.	Octa-	458/460	0.75-1.01	J.	Octa-	442/444	0.75-1.01

LDC #: 5115L21
SDG #: 47515B

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: MG
2nd Reviewer: SR

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8280)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all samples associated with a method blank?
(Y) N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
Y (N) N/A Was method blank contamination less < CRQL for all target compounds?
Y N (N/A) Was the contaminant peak signal < 2% of the associated internal standard?

Blank extraction date: 12-29-98 **Blank analysis date:** 1-7-99

Conc. units: ppb assoc'd samples: All

Compound	Blank ID	Sample Identification								
	TLI BLANK	1								
R	(EMPC) 1.6	(EMPC) 1.8 ~~U~~								
S	0.04									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. · Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Contact: Dave Bjostad Tel #: (619) 268-3383 Fax #: (619) 268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: Same.

Project Name/Code: Long Beach Shipyard AOCs Job # 6210-014 P.O. #

Project Address APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: D. Bjostad

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: 8280A Dioxins and Furans (full list)	Remarks
985Y-M4Wa-B-0		12-15-98	1300	wood	4°C None	6	X	Extra volume for MS/MSD
985Y-T10d-S-0		12-15-98	1120	Soil	4°C none	2	X	

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 12-15-98 / 1400 Received by [signature] Date/Time 12/15/98 / 1400

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

N60258_000052
NSY LONG BEACH
SSIC NO. 5090.3.A
VOLUMES V AND VI OF VI
FOLDER 2 OF 2

FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 5 of 6
Appendix O - Part 2

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

Prepared by:

CDM FEDERAL PROGRAMS CORPORATION
3760 Convoy Street, Suite 210
San Diego, California 92111

14 April 2000

Data Validation Reports
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
VOLUME 4 of 6				
98-3364	2941B1	6/9/98	Metals	Metals
98-3365	2941C1	6/10/98	Volatiles	VOCs
98-3365	2941C2	6/10/98	Semivolatiles	SVOCs
98-3365	2941C3	6/10/98	Polychlorinated Biphenyls	PCBs
98-3365	2941C6	6/10/98	Wet Chemistry	pH
98-3365	2941C7	6/10/98	TPH-Gasoline	TPH-Gasoline
98-3365	2941C8	6/10/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A1	6/11/98	Volatiles	VOCs
98-3406	3048A2	6/11/98	Semivolatiles	SVOCs
98-3406	3048A3	6/11/98	Polychlorinated Biphenyls	PCBs
98-3406	3048A4	6/11/98	Metals	Metals
98-6314	3715A4	6/11/98	Tin	Tin
98-3406	3048A7	6/11/98	TPH-Gasoline	TPH-Gasoline
98-3406	3048A8	6/11/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A16	6/11/98	Cyanide	CN
98-3406	3048A28	6/11/98	Hexavalent Chromium	Cr^{+6}
98-3406	3048A6	6/11/98	pH	pH
98-3459	3048B1	6/16/98	Volatiles	VOCs
98-3459	3048B2	6/16/98	Semivolatiles	SVOCs
98-3459	3048B4	6/16/98	Metals	Metals
98-3459	3048B3	6/16/98	Polychlorinated Biphenyls	PCBs
98-3459	3048B7	6/16/98	TPH-Gasoline	TPH-Gasoline
98-3459	3048B8	6/16/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3459	3048B16	6/16/98	Cyanide	CN
98-3459	3048B28	6/16/98	Hexavalent Chromium	Cr^{+6}
98-3459	3048B6	6/16/98	pH	pH
98-3466	3048C1	6/17/98	Volatiles	VOCs
98-3466	3048C2	6/17/98	Semivolatiles	SVOCs
98-3466	3048C4	6/17/98	Metals	Metals
98-3466	3048C3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3467	3048D3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3466	3048C7	6/17/98	TPH-Gasoline	TPH-Gasoline
98-3466	3048C8	6/17/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3466	3048C16	6/17/98	Cyanide	CN

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
98-3466	3048C28	6/17/98	Hexavalent Chromium	Cr^{+6}
98-3466	3048C6	6/17/98	pH	pH
98-3473	3048E1	6/18/98	Volatiles	VOCs
98-3473	3048E2	6/18/98	Semivolatiles	SVOCs
98-3473	3048E4	6/18/98	Metals	Metals
98-3473	3048E23	6/18/98	Polychlorinated Biphenyls	PCBs
98-3473	3048E7	6/18/98	TPH-Gasoline	TPH-Gasoline
98-3473	3048E8	6/18/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3473	3048E16	6/18/98	Cyanide	CN
98-3473	3048E6	6/18/98	pH	pH
47515A	3715K21	12/15/98	Dioxins/Dibenzofurans	Dioxins
47515B	3715L21	12/15/98	Dioxins/Dibenzofurans	Dioxins
VOLUME 5 of 6				
99-2007	3715B1	2/23-24/99	Volatiles	VOCs
99-2007	3715B2	2/23-2/23-24/99	Semivolatiles	SVOCs
99-2007	3715B3	2/23-24/99	Polychlorinated Biphenyls	PCBs
99-2007	3715B7	2/23-24/99	TPH-Gasoline	TPH-Gasoline
99-2007	3715B8	2/23-24/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2007	3715B4	2/23-24/99	Metals	Metals
99-2007	3715B6	2/23-24/99	Wet Chemistry	pH
99-2065	3715C1	2/25/99	Volatiles	VOCs
99-2065	3715C2	2/25/99	Semivolatiles	SVOCs
99-2065	3715C3	2/25/99	Polychlorinated Biphenyls	PCBs
99-2065	3715C8	2/25/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2065	3715C4	2/25/99	Metals	Metals
99-2065	3715C6	2/25/99	pH	pH
99-2110	3715D1	2/26/99	Volatiles	VOCs
99-2110	3715D2	2/26/99	Semivolatiles	SVOCs
99-2110	3715D3	2/26/99	Polychlorinated Biphenyls	PCBs
99-2110	3715D7	2/26/99	TPH-Gasoline	TPH-Gasoline
99-2110	3715D8	2/26/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2110	3715D4	2/26/99	Metals	Metals
99-2110	3715D6	2/26/99	pH	pH
99-2139	3715E1	3/1/99	Volatiles	VOCs
99-2139	3715E2	3/1/99	Semivolatiles	SVOCs

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2139	3715E3	3/1/99	Polychlorinated Biphenyls	PCBs
99-2139	3715E7	3/1/99	TPH-Gasoline	TPH-Gasoline
99-2139	3715E8	3/1/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2139	3715E4	3/1/99	Metals	Metals
99-2139	3715E6	3/1/99	pH	pH
99-2178	3715F1	3/2/99	Volatiles	VOCs
99-2178	3715F2	3/2/99	Semivolatiles	SVOCs
99-2178	3715F3	3/2/99	Polychlorinated Biphenyls	PCBs
99-2178	3715F7	3/2/99	TPH-Gasoline	TPH-Gasoline
99-2178	3715F8	3/2/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2178	3715F4	3/2/99	Metals	Metals
99-2178	3715F6	3/2/99	Wet Chemistry	pH
99-2216	3715G2	3/3/99	Semivolatiles	SVOCs
99-2216	3715G8	3/3/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2216	3715G4	3/3/99	Metals	Metals
99-2216	3715G6	3/3/99	pH	pH
99-2224	3715H2	3/4/99	Semivolatiles	SVOCs
99-2224	3715H8	3/4/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2224	3715H4	3/4/99	Metals	Metals
99-2224	3715H6	3/4/99	pH	pH
VOLUME 6 of 6				
99-2302	3715I1	3/5/99	Volatiles	VOCs
99-2302	3715I2	3/5/99	Semivolatiles	SVOCs
99-2302	3715I3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2302	3715I8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2302	3715I4	3/5/99	Metals	Metals
99-2302	3715I6	3/5/99	pH	pH
99-2692	3749A1	3/5/99	Volatiles	VOCs
99-2692	3749A2	3/5/99	Semivolatiles	SVOCs
99-2692	3749A3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2692	3749A8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2692	3749A6	3/5/99	pH	pH
99-2329	3715J1	3/8/99	Volatiles	VOCs
99-2329	3715J2	3/8/99	Semivolatiles	SVOCs
99-2329	3715J7	3/8/99	TPH-Gasoline	TPH-Gasoline

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2329	3715J8	3/8/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2329	3715J4	3/8/99	Metals	Metals
99-2329	3715J6	3/8/99	pH	pH
99-2367	3722B1	3/9/99	Volatiles	VOCs
99-2367	3722B2	3/9/99	Semivolatiles	SVOCs
99-2367	3722A3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B7	3/9/99	TPH-Gasoline	TPH-Gasoline
99-2367	3722B8	3/9/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2367	3722B4	3/9/99	Metals	Metals
99-2367	3722B6	3/9/99	Wet Chemistry	pH
99-2392	3722C1	3/10/99	Volatiles	VOCs
99-2392	3722C2	3/10/99	Semivolatiles	SVOCs
99-2392	3722C7	3/10/99	TPH-Gasoline	TPH-Gasoline
99-2392	3722C8	3/10/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2392	3722C4	3/10/99	Metals	Metals
99-2392	3722C6	3/10/99	pH	pH

Notes:

CDM = Camp, Dresser & McKee
CN = Cyanide
Cr^{+6} = Hexavalent Chromium
LDC = Laboratory Data Consultants
No. = Number
PCBs = Polychlorinated Biphenyls
SDG = Sample Delivery Group
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-BT1n-W-10
99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3
99SY-MI8e-W-13.4
99SY-MI8i-S-1
99SY-MI8i-W-11
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-BT1o-W-10
99SY-MI8a-S-7
99SY-MI8a-W-10.9
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11**
99SY-MI8h-S-1
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7
99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-W-10.2MS
99SY-MI8n-W-10.2MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/2/99	Naphthalene	41.9	All water samples in SDG 99-2007	J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples 99SY-BT1n-W-10 and 99SY-BT1o-W-10 were identified as trip blanks. No

volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1n-W-10	2/23/99	Chloroform	8 ug/L	99SY-MI8d-S-3 99SY-MI8d-W-11.5 99SY-MI8e-S-3 99SY-MI8e-W-13.4 99SY-MI8i-S-1 99SY-MI8i-W-11 99SY-MI8k-S-1 99SY-MI8k-W-10.2 99SY-MI8n-S-1 99SY-MI8n-W-10.2 99SY-MI8a-S-7 99SY-MI8a-W-10.9 99SY-MI8b-S-7 99SY-MI8b-W-10.9 99SY-MI8f-S-4 99SY-MI8f-W-11** 99SY-MI8h-S-1 99SY-MI8h-W-10.8 99SY-MI8j-S-5 99SY-MI8j-W-11.7 99SY-MI8m-S-7 99SY-MI8m-W-10.9
99SY-BT1o-W-10	2/24/99	Chloroform	11 ug/L	99SY-MI8d-S-3 99SY-MI8d-W-11.5 99SY-MI8e-S-3 99SY-MI8e-W-13.4 99SY-MI8i-S-1 99SY-MI8i-W-11 99SY-MI8k-S-1 99SY-MI8k-W-10.2 99SY-MI8n-S-1 99SY-MI8n-W-10.2 99SY-MI8a-S-7 99SY-MI8a-W-10.9 99SY-MI8b-S-7 99SY-MI8b-W-10.9 99SY-MI8f-S-4 99SY-MI8f-W-11** 99SY-MI8h-S-1 99SY-MI8h-W-10.8 99SY-MI8j-S-5 99SY-MI8j-W-11.7 99SY-MI8m-S-7 99SY-MI8m-W-10.9

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-MI8d-W-11.5	Chloroform	0.6 ug/L	5U ug/L
99SY-MI8i-W-11	Chloroform	0.7 ug/L	5U ug/L
99SY-MI8n-W-10.2	Chloroform	0.7 ug/L	5U ug/L
99SY-MI8a-W-10.9	Chloroform	0.9 ug/L	5U ug/L
99SY-MI8b-W-10.9	Chloroform	2 ug/L	5U ug/L
99SY-MI8f-W-11**	Chloroform	2 ug/L	5U ug/L
99SY-MI8h-W-10.8	Chloroform	1 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-MI8k-S-1 and 99SY-MI8k-W-10.2, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-MI8k-W-10.2	99SY-MI8n-W-10.2			
Chloroform	5U	0.7	200 (≤20)	J	A
cis-1,2-Dichloroethene	5U	0.9	200 (≤20)	J	A

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-MI8b-W-10.9	99SY-MI8m-W-10.9			
Chloroform	2	5U	200 (≤20)	J	A

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2007

SDG	Sample	Compound	Flag	A or P	Reason
99-2007	99SY-BT1n-W-10 99SY-MI8d-W-11.5 99SY-MI8e-W-13.4 99SY-MI8i-W-11 99SY-MI8k-W-10.2 99SY-MI8n-W-10.2 99SY-BT1o-W-10 99SY-MI8a-W-10.9 99SY-MI8b-W-10.9 99SY-MI8f-W-11** 99SY-MI8h-W-10.8 99SY-MI8j-W-11.7 99SY-MI8m-W-10.9	Naphthalene	J	A	Continuing calibration (%D)
99-2007	99SY-MI8k-W-10.2 99SY-MI8n-W-10.2	Chloroform cis-1,2-Dichloroethene	J J	A	Field duplicates (RPD)
99-2007	99SY-MI8b-W-10.9 99SY-MI8m-W-10.9	Chloroform	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2007

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2007	99SY-MI8d-W-11.5	Chloroform	5U ug/L	A
99-2007	99SY-MI8i-W-11	Chloroform	5U ug/L	A
99-2007	99SY-MI8n-W-10.2	Chloroform	5U ug/L	A
99-2007	99SY-MI8a-W-10.9	Chloroform	5U ug/L	A
99-2007	99SY-MI8b-W-10.9	Chloroform	5U ug/L	A
99-2007	99SY-MI8f-W-11**	Chloroform	5U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2007	99SY-MI8h-W-10.8	Chloroform	5U ug/L	A

B

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-1	Received Date:	02/24/1999
Sample ID:	**99SY-BT1N-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	05:48
Data File Name:	2007-01	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	8	
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	93
2	Dibromofluoromethane	1868-53-7	79-120	101
3	1,2-Dichloroethane-d4	17060-07-0	81-119	116
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	83
3	Fluorobenzene	462-06-6	50-200	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	06:29
Data File Name:	2007-02A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	102
3	1,2-Dichloroethane-d4	17060-07-0	75-129	110
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	75
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	06:30
Data File Name:	2007-03	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	~~0.6~~	J 5U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	116
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	85
3	Fluorobenzene	462-06-6	50-200	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	06:59
Data File Name:	2007-04A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.9	< 5.9	U
2	Bromobenzene	108-86-1	µg/kg	5.9	< 5.9	U
3	Bromochloromethane	74-97-5	µg/kg	5.9	< 5.9	U
4	Bromodichloromethane	75-27-4	µg/kg	5.9	< 5.9	U
5	Bromoform	75-25-2	µg/kg	5.9	< 5.9	U
6	Bromomethane	74-83-9	µg/kg	5.9	< 5.9	U
7	n-Butylbenzene	104-51-8	µg/kg	5.9	< 5.9	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.9	< 5.9	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.9	< 5.9	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.9	< 5.9	U
11	Chlorobenzene	108-90-7	µg/kg	5.9	< 5.9	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.9	< 5.9	U
13	Chloroethane	75-00-3	µg/kg	5.9	< 5.9	U
14	Chloroform	67-66-3	µg/kg	5.9	< 5.9	U
15	Chloromethane	74-87-3	µg/kg	5.9	< 5.9	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.9	< 5.9	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.9	< 5.9	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.9	< 5.9	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.9	< 5.9	U
20	Dibromomethane	74-95-3	µg/kg	5.9	< 5.9	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.9	< 5.9	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.9	< 5.9	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.9	< 5.9	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.9	< 5.9	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.9	< 5.9	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.9	< 5.9	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.9	< 5.9	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.9	< 5.9	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.9	< 5.9	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.9	< 5.9	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.9	< 5.9	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.9	< 5.9	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.9	< 5.9	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.9	< 5.9	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.9	< 5.9	U
36	Ethylbenzene	100-41-4	µg/kg	5.9	< 5.9	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.9	< 5.9	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.9	< 5.9	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.9	< 5.9	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.9	< 5.9	U
41	Naphthalene	91-20-3	µg/kg	5.9	< 5.9	U
42	n-Propylbenzene	103-65-1	µg/kg	5.9	< 5.9	U
43	Styrene	100-42-5	µg/kg	5.9	< 5.9	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.9	< 5.9	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.9	< 5.9	U
46	Tetrachloroethene	127-18-4	µg/kg	5.9	< 5.9	U
47	Toluene	108-88-3	µg/kg	5.9	< 5.9	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.9	< 5.9	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.9	< 5.9	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.9	< 5.9	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.9	< 5.9	U
52	Trichloroethene	79-01-6	µg/kg	5.9	< 5.9	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.9	< 5.9	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.9	< 5.9	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.9	< 5.9	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.9	< 5.9	U
57	Vinyl chloride	75-01-4	µg/kg	5.9	< 5.9	U
58	o-Xylene	95-47-6	µg/kg	5.9	< 5.9	U
59	m/p-Xylene	108-38-3	µg/kg	5.9	< 5.9	U
60	Xylenes (total)	1330-20-7	µg/kg	5.9	< 5.9	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	102
3	1,2-Dichloroethane-d4	17060-07-0	75-129	111
4	Toluene-d8	2037-26-5	80-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	75
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	07:11
Data File Name:	2007-05	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	88
2	Dibromofluoromethane	1868-53-7	79-120	103
3	1,2-Dichloroethane-d4	17060-07-0	81-119	117
4	Toluene-d8	2037-26-5	81-118	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	07:30
Data File Name:	2007-06A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	109
4	Toluene-d8	2037-26-5	80-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	75
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	07:52
Data File Name:	2007-07	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	~~0.7~~	~~J~~ 5U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	101
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	89
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
3	Fluorobenzene	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14859

2146

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	–	Anal. Time:	08:00
Data File Name:	2007-08A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	102
3	1,2-Dichloroethane-d4	17060-07-0	75-129	112
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	71
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	65
3	Fluorobenzene	462-06-6	50-200	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	08:34
Data File Name:	2007-09	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	~~U~~ UJ
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	~~U~~ UJ
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
3	Fluorobenzene	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

MW89 2157

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	–	Anal. Time:	08:31
Data File Name:	2007-10A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	112
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	70
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	63
3	Fluorobenzene	462-06-6	50-200	68
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

AU089 2163

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	09:15
Data File Name:	2007-11	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	~~0.7~~	~~J~~ UJ
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	0.9	J J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	91
2	Dibromofluoromethane	1868-53-7	79-120	100
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	85
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
3	Fluorobenzene	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-12	Received Date:	02/24/1999
Sample ID:	**99SY-BT1O-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	01:48
Data File Name:	2007-12	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	11	
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	89
2	Dibromofluoromethane	1868-53-7	79-120	89
3	1,2-Dichloroethane-d4	17060-07-0	81-119	82
4	Toluene-d8	2037-26-5	81-118	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	09:02
Data File Name:	2007-15A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.0	<6.0	U
2	Bromobenzene	108-86-1	µg/kg	6.0	<6.0	U
3	Bromochloromethane	74-97-5	µg/kg	6.0	<6.0	U
4	Bromodichloromethane	75-27-4	µg/kg	6.0	<6.0	U
5	Bromoform	75-25-2	µg/kg	6.0	<6.0	U
6	Bromomethane	74-83-9	µg/kg	6.0	<6.0	U
7	n-Butylbenzene	104-51-8	µg/kg	6.0	<6.0	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.0	<6.0	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.0	<6.0	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.0	<6.0	U
11	Chlorobenzene	108-90-7	µg/kg	6.0	<6.0	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.0	<6.0	U
13	Chloroethane	75-00-3	µg/kg	6.0	<6.0	U
14	Chloroform	67-66-3	µg/kg	6.0	<6.0	U
15	Chloromethane	74-87-3	µg/kg	6.0	<6.0	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.0	<6.0	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.0	<6.0	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	6.0	<6.0	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.0	<6.0	U
20	Dibromomethane	74-95-3	µg/kg	6.0	<6.0	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.0	<6.0	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.0	<6.0	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.0	<6.0	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.0	<6.0	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.0	<6.0	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.0	<6.0	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.0	<6.0	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.0	<6.0	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.0	<6.0	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.0	<6.0	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.0	<6.0	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.0	<6.0	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.0	<6.0	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.0	<6.0	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.0	<6.0	U
36	Ethylbenzene	100-41-4	µg/kg	6.0	<6.0	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.0	<6.0	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.0	<6.0	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.0	<6.0	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.0	<6.0	U
41	Naphthalene	91-20-3	µg/kg	6.0	<6.0	U
42	n-Propylbenzene	103-65-1	µg/kg	6.0	<6.0	U
43	Styrene	100-42-5	µg/kg	6.0	<6.0	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.0	<6.0	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.0	<6.0	U
46	Tetrachloroethene	127-18-4	µg/kg	6.0	<6.0	U
47	Toluene	108-88-3	µg/kg	6.0	<6.0	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.0	<6.0	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.0	<6.0	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.0	<6.0	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.0	<6.0	U
52	Trichloroethene	79-01-6	µg/kg	6.0	<6.0	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.0	<6.0	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.0	<6.0	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.0	<6.0	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.0	<6.0	U
57	Vinyl chloride	75-01-4	µg/kg	6.0	<6.0	U
58	o-Xylene	95-47-6	µg/kg	6.0	<6.0	U
59	m/p-Xylene	108-38-3	µg/kg	6.0	<6.0	U
60	Xylenes (total)	1330-20-7	µg/kg	6.0	<6.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	86
2	Dibromofluoromethane	1868-53-7	75-124	102
3	1,2-Dichloroethane-d4	17060-07-0	75-129	116
4	Toluene-d8	2037-26-5	80-119	86
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	70
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	63
3	Fluorobenzene	462-06-6	50-200	67
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	02:50
Data File Name:	2007-16	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	0.9	J SU
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	89
2	Dibromofluoromethane	1868-53-7	79-120	92
3	1,2-Dichloroethane-d4	17060-07-0	81-119	91
4	Toluene-d8	2037-26-5	81-118	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	77
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	–	Anal. Time:	09:32
Data File Name:	2007-18A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	90
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	114
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	71
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	62
3	Fluorobenzene	462-06-6	50-200	68
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	02:19
Data File Name:	2007-19	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	2	J
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	91
3	1,2-Dichloroethane-d4	17060-07-0	81-119	85
4	Toluene-d8	2037-26-5	81-118	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	82
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	10:03
Data File Name:	2007-20A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.9	< 5.9	U
2	Bromobenzene	108-86-1	µg/kg	5.9	< 5.9	U
3	Bromochloromethane	74-97-5	µg/kg	5.9	< 5.9	U
4	Bromodichloromethane	75-27-4	µg/kg	5.9	< 5.9	U
5	Bromoform	75-25-2	µg/kg	5.9	< 5.9	U
6	Bromomethane	74-83-9	µg/kg	5.9	< 5.9	U
7	n-Butylbenzene	104-51-8	µg/kg	5.9	< 5.9	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.9	< 5.9	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.9	< 5.9	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.9	< 5.9	U
11	Chlorobenzene	108-90-7	µg/kg	5.9	< 5.9	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.9	< 5.9	U
13	Chloroethane	75-00-3	µg/kg	5.9	< 5.9	U
14	Chloroform	67-66-3	µg/kg	5.9	< 5.9	U
15	Chloromethane	74-87-3	µg/kg	5.9	< 5.9	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.9	< 5.9	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.9	< 5.9	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.9	< 5.9	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.9	< 5.9	U
20	Dibromomethane	74-95-3	µg/kg	5.9	< 5.9	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.9	< 5.9	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.9	< 5.9	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.9	< 5.9	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.9	< 5.9	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.9	< 5.9	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.9	< 5.9	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.9	< 5.9	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.9	< 5.9	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.9	< 5.9	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.9	< 5.9	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.9	< 5.9	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.9	< 5.9	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.9	< 5.9	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.9	< 5.9	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.9	< 5.9	U
36	Ethylbenzene	100-41-4	µg/kg	5.9	< 5.9	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.9	< 5.9	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.9	< 5.9	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.9	< 5.9	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.9	< 5.9	U
41	Naphthalene	91-20-3	µg/kg	5.9	< 5.9	U
42	n-Propylbenzene	103-65-1	µg/kg	5.9	< 5.9	U
43	Styrene	100-42-5	µg/kg	5.9	< 5.9	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.9	< 5.9	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.9	< 5.9	U
46	Tetrachloroethene	127-18-4	µg/kg	5.9	< 5.9	U
47	Toluene	108-88-3	µg/kg	5.9	< 5.9	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.9	< 5.9	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.9	< 5.9	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.9	< 5.9	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.9	< 5.9	U
52	Trichloroethene	79-01-6	µg/kg	5.9	< 5.9	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.9	< 5.9	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.9	< 5.9	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.9	< 5.9	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.9	< 5.9	U
57	Vinyl chloride	75-01-4	µg/kg	5.9	< 5.9	U
58	o-Xylene	95-47-6	µg/kg	5.9	< 5.9	U
59	m/p-Xylene	108-38-3	µg/kg	5.9	< 5.9	U
60	Xylenes (total)	1330-20-7	µg/kg	5.9	< 5.9	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	103
3	1,2-Dichloroethane-d4	17060-07-0	75-129	112
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	69
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	62
3	Fluorobenzene	462-06-6	50-200	66
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2197

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	–	Anal. Time:	04:25
Data File Name:	2007-21	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	2	J 54
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U 2200

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	87
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2201

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	10:33
Data File Name:	2007-22A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	104
3	1,2-Dichloroethane-d4	17060-07-0	75-129	115
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	69
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	61
3	Fluorobenzene	462-06-6	50-200	66
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	–	Anal. Time:	03:21
Data File Name:	2007-23	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	1	J 5U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	92
2	Dibromofluoromethane	1868-53-7	79-120	93
3	1,2-Dichloroethane-d4	17060-07-0	81-119	92
4	Toluene-d8	2037-26-5	81-118	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	76
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	70
3	Fluorobenzene	462-06-6	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	11:04
Data File Name:	2007-24A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.3	<6.3	U
2	Bromobenzene	108-86-1	µg/kg	6.3	<6.3	U
3	Bromochloromethane	74-97-5	µg/kg	6.3	<6.3	U
4	Bromodichloromethane	75-27-4	µg/kg	6.3	<6.3	U
5	Bromoform	75-25-2	µg/kg	6.3	<6.3	U
6	Bromomethane	74-83-9	µg/kg	6.3	<6.3	U
7	n-Butylbenzene	104-51-8	µg/kg	6.3	<6.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.3	<6.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.3	<6.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.3	<6.3	U
11	Chlorobenzene	108-90-7	µg/kg	6.3	<6.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.3	<6.3	U
13	Chloroethane	75-00-3	µg/kg	6.3	<6.3	U
14	Chloroform	67-66-3	µg/kg	6.3	<6.3	U
15	Chloromethane	74-87-3	µg/kg	6.3	<6.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.3	<6.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.3	<6.3	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	6.3	<6.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.3	<6.3	U
20	Dibromomethane	74-95-3	µg/kg	6.3	<6.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.3	<6.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.3	<6.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.3	<6.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.3	<6.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.3	<6.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.3	<6.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.3	<6.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.3	<6.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.3	<6.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.3	<6.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.3	<6.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.3	<6.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.3	<6.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.3	<6.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.3	<6.3	U
36	Ethylbenzene	100-41-4	µg/kg	6.3	<6.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.3	<6.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.3	<6.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.3	<6.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.3	<6.3	U
41	Naphthalene	91-20-3	µg/kg	6.3	<6.3	U
42	n-Propylbenzene	103-65-1	µg/kg	6.3	<6.3	U
43	Styrene	100-42-5	µg/kg	6.3	<6.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.3	<6.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.3	<6.3	U
46	Tetrachloroethene	127-18-4	µg/kg	6.3	<6.3	U
47	Toluene	108-88-3	µg/kg	6.3	<6.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.3	<6.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.3	<6.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.3	<6.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.3	<6.3	U
52	Trichloroethene	79-01-6	µg/kg	6.3	<6.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.3	<6.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.3	<6.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.3	<6.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.3	<6.3	U
57	Vinyl chloride	75-01-4	µg/kg	6.3	<6.3	U
58	o-Xylene	95-47-6	µg/kg	6.3	<6.3	U
59	m/p-Xylene	108-38-3	µg/kg	6.3	<6.3	U
60	Xylenes (total)	1330-20-7	µg/kg	6.3	<6.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	103
3	1,2-Dichloroethane-d4	17060-07-0	75-129	114
4	Toluene-d8	2037-26-5	80-119	85
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	71
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	62
3	Fluorobenzene	462-06-6	50-200	67
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	–	Anal. Time:	03:53
Data File Name:	2007-25	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	91
2	Dibromofluoromethane	1868-53-7	79-120	96
3	1,2-Dichloroethane-d4	17060-07-0	81-119	101
4	Toluene-d8	2037-26-5	81-118	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	79
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
3	Fluorobenzene	462-06-6	50-200	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-S-7**	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	11:35
Data File Name:	2007-26A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	103
3	1,2-Dichloroethane-d4	17060-07-0	75-129	116
4	Toluene-d8	2037-26-5	80-119	84
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	69
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	58
3	Fluorobenzene	462-06-6	50-200	65
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1749	Prep. No:	-	Anal. Time:	05:07
Data File Name:	2007-27	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U UJ
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U 2232

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	UJ
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	92
2	Dibromofluoromethane	1868-53-7	79-120	103
3	1,2-Dichloroethane-d4	17060-07-0	81-119	117
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
3	Fluorobenzene	462-06-6	50-200	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3
99SY-MI8e-W-13.4**
99SY-MI8i-S-1
99SY-MI8i-W-11**
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-MI8a-S-7
99SY-MI8a-W-10.9
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11
99SY-MI8h-S-1**
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7

99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-W-10.2MS
99SY-MI8n-W-10.2MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-MI8j-S-5	Perylene-d12	161492 (179455-717822)	Di-n-octylphthalate	J	A
			Benzo(b)fluoranthene	J	
			Benzo(k)fluoranthene	J	
			Benzo(a)pyrene	J	
			Indeno(1,2,3-cd)pyrene	J	
			Dibenz(a,h)anthracene	J	
			Benzo(g,h,i)perylene	J	

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-MI8k-W-10.2	99SY-MI8n-W-10.2			
Bis(2-ethylhexyl)phthalate	20	18	10 (≤20)	-	-

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2007

SDG	Sample	Compound	Flag	A or P	Reason
99-2007	99SY-MI8j-S-5	Di-n-octylphthalate	J	A	Internal standards (area)
		Benzo(b)fluoranthene	J		
		Benzo(k)fluoranthene	J		
		Benzo(a)pyrene	J		
		Indeno(1,2,3-cd)pyrene	J		
		Dibenz(a,h)anthracene	J		
		Benzo(g,h,i)perylene	J		

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	14:04
Data File Name:	2007-02	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	36
2	2-Fluorophenol	367-12-4	25-103	38
3	Nitrobenzene-d5	4165-60-0	23-119	35
4	Phenol-d5	4165-62-2	24-112	39
5	Terphenyl-d14	1718-51-0	18-136	91
6	2,4,6-Tribromophenol	118-79-6	20-119	38
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	109
2	Chrysene-d12	1719-03-5	50-200	84
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	103
4	Naphthalene-d8	1146-65-2	50-200	110
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	20:32
Data File Name:	2007-03	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	55
2	2-Fluorophenol	367-12-4	21- 99	38
3	Nitrobenzene-d5	4165-60-0	35-113	60
4	Phenol-d5	4165-62-2	10- 93	30
5	Terphenyl-d14	1718-51-0	33-140	87
6	2,4,6-Tribromophenol	118-79-6	10-122	59
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	183
2	Chrysene-d12	1719-03-5	50-200	165
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	167
4	Naphthalene-d8	1146-65-2	50-200	186
5	Perylene-d12	1520-96-3	50-200	160
6	Phenanthrene-d10	1517-22-2	50-200	170
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	13:21
Data File Name:	2007-04	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	590	< 590	U
2	Acenaphthylene	208-96-8	µg/kg	590	< 590	U
3	Anthracene	120-12-7	µg/kg	590	< 590	U
4	Benz(a)anthracene	56-55-3	µg/kg	590	< 590	U
5	Benzo(a)pyrene	50-32-8	µg/kg	590	< 590	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	590	< 590	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	590	< 590	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	590	< 590	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	590	< 590	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	590	< 590	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	590	< 590	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	590	< 590	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	590	< 590	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	590	< 590	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	590	< 590	U
18	2-Chlorophenol	95-57-8	µg/kg	590	< 590	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	590	< 590	U
20	Chrysene	218-01-9	µg/kg	590	< 590	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	590	< 590	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	590	< 590	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	590	< 590	U
24	Dibenzofuran	132-64-9	µg/kg	590	< 590	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	590	< 590	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	590	< 590	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	590	< 590	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	590	< 590	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	590	< 590	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	590	< 590	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	590	< 590	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	590	< 590	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	590	< 590	U
37	Fluoranthene	206-44-0	µg/kg	590	< 590	U
38	Fluorene	86-73-7	µg/kg	590	< 590	U
39	Hexachlorobenzene	118-74-1	µg/kg	590	< 590	U
40	Hexachlorobutadiene	87-68-3	µg/kg	590	< 590	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	590	< 590	U
42	Hexachloroethane	67-72-1	µg/kg	590	< 590	U
43	Indeno(1.2,3-cd)pyrene	193-39-5	µg/kg	590	< 590	U
44	Isophorone	78-59-1	µg/kg	590	< 590	U
45	2-Methylnaphthalene	91-57-6	µg/kg	590	< 590	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	590	< 590	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	590	< 590	U
48	Naphthalene	91-20-3	µg/kg	590	< 590	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	590	< 590	U
53	2-Nitrophenol	88-75-5	µg/kg	590	< 590	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	590	< 590	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	590	< 590	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	590	< 590	U
59	Phenol	108-95-2	µg/kg	590	< 590	U
60	Pyrene	129-00-0	µg/kg	590	< 590	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	590	< 590	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	590	< 590	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	590	< 590	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	48
2	2-Fluorophenol	367-12-4	25-103	52
3	Nitrobenzene-d5	4165-60-0	23-119	54
4	Phenol-d5	4165-62-2	24-112	52
5	Terphenyl-d14	1718-51-0	18-136	80
6	2,4,6-Tribromophenol	118-79-6	20-119	41
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	110
2	Chrysene-d12	1719-03-5	50-200	85
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	122
4	Naphthalene-d8	1146-65-2	50-200	119
5	Perylene-d12	1520-96-3	50-200	91
6	Phenanthrene-d10	1517-22-2	50-200	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	21:11
Data File Name:	2007-05	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	66
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	76
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	108
6	2,4,6-Tribromophenol	118-79-6	10-122	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	92
2	Chrysene-d12	1719-03-5	50-200	84
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	81
6	Phenanthrene-d10	1517-22-2	50-200	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	22:44
Data File Name:	2007-06	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	62
2	2-Fluorophenol	367-12-4	25-103	68
3	Nitrobenzene-d5	4165-60-0	23-119	63
4	Phenol-d5	4165-62-2	24-112	62
5	Terphenyl-d14	1718-51-0	18-136	90
6	2,4,6-Tribromophenol	118-79-6	20-119	44
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	86
2	Chrysene-d12	1719-03-5	50-200	67
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
4	Naphthalene-d8	1146-65-2	50-200	99
5	Perylene-d12	1520-96-3	50-200	65
6	Phenanthrene-d10	1517-22-2	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	21:49
Data File Name:	2007-07	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	18	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	71
2	2-Fluorophenol	367-12-4	21- 99	50
3	Nitrobenzene-d5	4165-60-0	35-113	81
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	120
6	2,4,6-Tribromophenol	118-79-6	10-122	70
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	100
2	Chrysene-d12	1719-03-5	50-200	93
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
4	Naphthalene-d8	1146-65-2	50-200	104
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2404

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	12:39
Data File Name:	2007-08	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	μg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	μg/kg	550	< 550	U
3	Anthracene	120-12-7	μg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	μg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	μg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	μg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	μg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	μg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	μg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	μg/kg	550	< 550	U
11	Bis(2-chloroisopropyl) ether	108-60-1	μg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	μg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	μg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	μg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	μg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	μg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	μg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	μg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	μg/kg	550	< 550	U
20	Chrysene	218-01-9	μg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	μg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	μg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	μg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	μg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	μg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	μg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	μg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	μg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	μg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	μg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	μg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	μg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	μg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	μg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	μg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	μg/kg	550	< 550	U
37	Fluoranthene	206-44-0	μg/kg	550	< 550	U
38	Fluorene	86-73-7	μg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	μg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	μg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	58
2	2-Fluorophenol	367-12-4	25-103	61
3	Nitrobenzene-d5	4165-60-0	23-119	62
4	Phenol-d5	4165-62-2	24-112	64
5	Terphenyl-d14	1718-51-0	18-136	97
6	2,4,6-Tribromophenol	118-79-6	20-119	49
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	120
2	Chrysene-d12	1719-03-5	50-200	91
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	113
4	Naphthalene-d8	1146-65-2	50-200	119
5	Perylene-d12	1520-96-3	50-200	100
6	Phenanthrene-d10	1517-22-2	50-200	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

~4/6/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	22:28
Data File Name:	2007-09	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	68
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	78
4	Phenol-d5	4165-62-2	10- 93	33
5	Terphenyl-d14	1718-51-0	33-140	115
6	2,4,6-Tribromophenol	118-79-6	10-122	70
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	108
2	Chrysene-d12	1719-03-5	50-200	97
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
4	Naphthalene-d8	1146-65-2	50-200	108
5	Perylene-d12	1520-96-3	50-200	95
6	Phenanthrene-d10	1517-22-2	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	19:14
Data File Name:	2007-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	60
2	2-Fluorophenol	367-12-4	25-103	65
3	Nitrobenzene-d5	4165-60-0	23-119	66
4	Phenol-d5	4165-62-2	24-112	60
5	Terphenyl-d14	1718-51-0	18-136	77
6	2,4,6-Tribromophenol	118-79-6	20-119	43
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	119
2	Chrysene-d12	1719-03-5	50-200	93
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	101
6	Phenanthrene-d10	1517-22-2	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	23:07
Data File Name:	2007-11	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	18	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	76
2	2-Fluorophenol	367-12-4	21- 99	55
3	Nitrobenzene-d5	4165-60-0	35-113	87
4	Phenol-d5	4165-62-2	10- 93	40
5	Terphenyl-d14	1718-51-0	33-140	120
6	2,4,6-Tribromophenol	118-79-6	10-122	75
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	91
2	Chrysene-d12	1719-03-5	50-200	88
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
4	Naphthalene-d8	1146-65-2	50-200	105
5	Perylene-d12	1520-96-3	50-200	84
6	Phenanthrene-d10	1517-22-2	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	23:26
Data File Name:	2007-15	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	< 600	U
2	Acenaphthylene	208-96-8	µg/kg	600	< 600	U
3	Anthracene	120-12-7	µg/kg	600	< 600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	< 600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	< 600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	< 600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	< 600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	< 600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	< 600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	< 600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	< 600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	< 600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	< 600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	< 600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	< 600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	< 600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	< 600	U
20	Chrysene	218-01-9	µg/kg	600	< 600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	< 600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	< 600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	< 600	U
24	Dibenzofuran	132-64-9	µg/kg	600	< 600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	< 600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	< 600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	< 600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	< 600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	< 600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	< 600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	< 600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	< 600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	< 600	U
37	Fluoranthene	206-44-0	µg/kg	600	< 600	U
38	Fluorene	86-73-7	µg/kg	600	< 600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	< 600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	< 600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	<600	U
42	Hexachloroethane	67-72-1	µg/kg	600	<600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	<600	U
44	Isophorone	78-59-1	µg/kg	600	<600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	<600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	<600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	<600	U
48	Naphthalene	91-20-3	µg/kg	600	<600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	<3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	<3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	<3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	<600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	<600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	<3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	<600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	<600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	<3000	U
58	Phenanthrene	85-01-8	µg/kg	600	<600	U
59	Phenol	108-95-2	µg/kg	600	<600	U
60	Pyrene	129-00-0	µg/kg	600	<600	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	<600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	<600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	<600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	64
2	2-Fluorophenol	367-12-4	25-103	64
3	Nitrobenzene-d5	4165-60-0	23-119	64
4	Phenol-d5	4165-62-2	24-112	67
5	Terphenyl-d14	1718-51-0	18-136	109
6	2,4,6-Tribromophenol	118-79-6	20-119	41
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	86
2	Chrysene-d12	1719-03-5	50-200	64
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	90
4	Naphthalene-d8	1146-65-2	50-200	95
5	Perylene-d12	1520-96-3	50-200	60
6	Phenanthrene-d10	1517-22-2	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	23:45
Data File Name:	2007-16	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	71
2	2-Fluorophenol	367-12-4	21- 99	59
3	Nitrobenzene-d5	4165-60-0	35-113	83
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	90
6	2,4,6-Tribromophenol	118-79-6	10-122	72
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	103
2	Chrysene-d12	1719-03-5	50-200	94
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
4	Naphthalene-d8	1146-65-2	50-200	101
5	Perylene-d12	1520-96-3	50-200	92
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	11:57
Data File Name:	2007-18	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	47
2	2-Fluorophenol	367-12-4	25-103	48
3	Nitrobenzene-d5	4165-60-0	23-119	49
4	Phenol-d5	4165-62-2	24-112	46
5	Terphenyl-d14	1718-51-0	18-136	67
6	2,4,6-Tribromophenol	118-79-6	20-119	37
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	124
2	Chrysene-d12	1719-03-5	50-200	94
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	126
5	Perylene-d12	1520-96-3	50-200	98
6	Phenanthrene-d10	1517-22-2	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	00:24
Data File Name:	2007-19	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	73
2	2-Fluorophenol	367-12-4	21- 99	55
3	Nitrobenzene-d5	4165-60-0	35-113	84
4	Phenol-d5	4165-62-2	10- 93	34
5	Terphenyl-d14	1718-51-0	33-140	92
6	2,4,6-Tribromophenol	118-79-6	10-122	74
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	126
2	Chrysene-d12	1719-03-5	50-200	117
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	114
4	Naphthalene-d8	1146-65-2	50-200	123
5	Perylene-d12	1520-96-3	50-200	114
6	Phenanthrene-d10	1517-22-2	50-200	125
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	18:31
Data File Name:	2007-20	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	590	< 590	U
2	Acenaphthylene	208-96-8	µg/kg	590	< 590	U
3	Anthracene	120-12-7	µg/kg	590	< 590	U
4	Benz(a)anthracene	56-55-3	µg/kg	590	< 590	U
5	Benzo(a)pyrene	50-32-8	µg/kg	590	< 590	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	590	< 590	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	590	< 590	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	590	< 590	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	590	< 590	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	590	< 590	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	590	< 590	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	590	< 590	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	590	< 590	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	590	< 590	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	590	< 590	U
18	2-Chlorophenol	95-57-8	µg/kg	590	< 590	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	590	< 590	U
20	Chrysene	218-01-9	µg/kg	590	< 590	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	590	< 590	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	590	< 590	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	590	< 590	U
24	Dibenzofuran	132-64-9	µg/kg	590	< 590	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	590	< 590	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	590	< 590	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	590	< 590	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	590	< 590	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	590	< 590	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	590	< 590	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	590	< 590	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	590	< 590	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	590	< 590	U
37	Fluoranthene	206-44-0	µg/kg	590	< 590	U
38	Fluorene	86-73-7	µg/kg	590	< 590	U
39	Hexachlorobenzene	118-74-1	µg/kg	590	< 590	U
40	Hexachlorobutadiene	87-68-3	µg/kg	590	< 590	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	590	< 590	U
42	Hexachloroethane	67-72-1	µg/kg	590	< 590	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	590	< 590	U
44	Isophorone	78-59-1	µg/kg	590	< 590	U
45	2-Methylnaphthalene	91-57-6	µg/kg	590	< 590	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	590	< 590	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	590	< 590	U
48	Naphthalene	91-20-3	µg/kg	590	< 590	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	590	< 590	U
53	2-Nitrophenol	88-75-5	µg/kg	590	< 590	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	590	< 590	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	590	< 590	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	590	< 590	U
59	Phenol	108-95-2	µg/kg	590	< 590	U
60	Pyrene	129-00-0	µg/kg	590	< 590	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	590	< 590	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	590	< 590	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	590	< 590	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	54
2	2-Fluorophenol	367-12-4	25-103	60
3	Nitrobenzene-d5	4165-60-0	23-119	56
4	Phenol-d5	4165-62-2	24-112	57
5	Terphenyl-d14	1718-51-0	18-136	82
6	2,4,6-Tribromophenol	118-79-6	20-119	39
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	100
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	01:03
Data File Name:	2007-21	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	77
2	2-Fluorophenol	367-12-4	21- 99	59
3	Nitrobenzene-d5	4165-60-0	35-113	82
4	Phenol-d5	4165-62-2	10- 93	39
5	Terphenyl-d14	1718-51-0	33-140	91
6	2,4,6-Tribromophenol	118-79-6	10-122	75
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	111
2	Chrysene-d12	1719-03-5	50-200	98
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	96
6	Phenanthrene-d10	1517-22-2	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	18:25
Data File Name:	2007-22	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	[redacted]	J
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	[redacted]	J
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	[redacted]	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	[redacted]	J
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	[redacted]	J
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	53
2	2-Fluorophenol	367-12-4	25-103	49
3	Nitrobenzene-d5	4165-60-0	23-119	50
4	Phenol-d5	4165-62-2	24-112	48
5	Terphenyl-d14	1718-51-0	18-136	101
6	2,4,6-Tribromophenol	118-79-6	20-119	60
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	179
2	Chrysene-d12	1719-03-5	50-200	124
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	164
4	Naphthalene-d8	1146-65-2	50-200	177
5	Perylene-d12	1520-96-3	50-200	63
6	Phenanthrene-d10	1517-22-2	50-200	185
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	01:41
Data File Name:	2007-23	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a.h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	79
2	2-Fluorophenol	367-12-4	21- 99	58
3	Nitrobenzene-d5	4165-60-0	35-113	89
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	100
6	2,4,6-Tribromophenol	118-79-6	10-122	85
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	99
2	Chrysene-d12	1719-03-5	50-200	90
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	17:42
Data File Name:	2007-24	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	630	< 630	U
2	Acenaphthylene	208-96-8	µg/kg	630	< 630	U
3	Anthracene	120-12-7	µg/kg	630	< 630	U
4	Benz(a)anthracene	56-55-3	µg/kg	630	< 630	U
5	Benzo(a)pyrene	50-32-8	µg/kg	630	< 630	~~U~~ UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	630	< 630	~~U~~ UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	630	< 630	~~U~~
8	Benzo(k)fluoranthene	207-08-9	µg/kg	630	< 630	~~U~~
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	630	< 630	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	630	< 630	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	630	< 630	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	630	< 630	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	630	< 630	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	630	< 630	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1300	< 1300	U
16	4-Chloroaniline	106-47-8	µg/kg	1300	< 1300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	630	< 630	U
18	2-Chlorophenol	95-57-8	µg/kg	630	< 630	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	630	< 630	U
20	Chrysene	218-01-9	µg/kg	630	< 630	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	630	< 630	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	630	< 630	~~U~~ UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	630	< 630	~~U~~ UJ
24	Dibenzofuran	132-64-9	µg/kg	630	< 630	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	630	< 630	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	630	< 630	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	630	< 630	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1300	< 1300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	630	< 630	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	630	< 630	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	630	< 630	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	630	< 630	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3200	< 3200	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3200	< 3200	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	630	< 630	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	630	< 630	U
37	Fluoranthene	206-44-0	µg/kg	630	< 630	U
38	Fluorene	86-73-7	µg/kg	630	< 630	U
39	Hexachlorobenzene	118-74-1	µg/kg	630	< 630	U
40	Hexachlorobutadiene	87-68-3	µg/kg	630	< 630	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	630	<630	U
42	Hexachloroethane	67-72-1	µg/kg	630	<630	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	630	<630	U UJ
44	Isophorone	78-59-1	µg/kg	630	<630	U
45	2-Methylnaphthalene	91-57-6	µg/kg	630	<630	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	630	<630	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	630	<630	U
48	Naphthalene	91-20-3	µg/kg	630	<630	U
49	2-Nitroaniline	88-74-4	µg/kg	3200	<3200	U
50	3-Nitroaniline	99-09-2	µg/kg	3200	<3200	U
51	4-Nitroaniline	100-01-6	µg/kg	3200	<3200	U
52	Nitrobenzene	98-95-3	µg/kg	630	<630	U
53	2-Nitrophenol	88-75-5	µg/kg	630	<630	U
54	4-Nitrophenol	100-02-7	µg/kg	3200	<3200	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	630	<630	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	630	<630	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3200	<3200	U
58	Phenanthrene	85-01-8	µg/kg	630	<630	U
59	Phenol	108-95-2	µg/kg	630	<630	U
60	Pyrene	129-00-0	µg/kg	630	<630	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	630	<630	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	630	<630	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	630	<630	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	41
2	2-Fluorophenol	367-12-4	25-103	40
3	Nitrobenzene-d5	4165-60-0	23-119	41
4	Phenol-d5	4165-62-2	24-112	43
5	Terphenyl-d14	1718-51-0	18-136	88
6	2,4,6-Tribromophenol	118-79-6	20-119	43
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	132
2	Chrysene-d12	1719-03-5	50-200	98
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	129
5	Perylene-d12	1520-96-3	50-200	45
6	Phenanthrene-d10	1517-22-2	50-200	134
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

04/08/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	02:20
Data File Name:	2007-25	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	73
2	2-Fluorophenol	367-12-4	21- 99	61
3	Nitrobenzene-d5	4165-60-0	35-113	83
4	Phenol-d5	4165-62-2	10- 93	44
5	Terphenyl-d14	1718-51-0	33-140	92
6	2,4,6-Tribromophenol	118-79-6	10-122	75
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	111
2	Chrysene-d12	1719-03-5	50-200	99
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	94
6	Phenanthrene-d10	1517-22-2	50-200	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2504

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-S-7**	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	19:56
Data File Name:	2007-26	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	62
2	2-Fluorophenol	367-12-4	25-103	65
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	66
5	Terphenyl-d14	1718-51-0	18-136	96
6	2,4,6-Tribromophenol	118-79-6	20-119	46
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	94
2	Chrysene-d12	1719-03-5	50-200	74
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	84
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2514

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1684	Prep. No:	1 of 1	Anal. Time:	02:59
Data File Name:	2007-27	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	72
2	2-Fluorophenol	367-12-4	21- 99	52
3	Nitrobenzene-d5	4165-60-0	35-113	78
4	Phenol-d5	4165-62-2	10- 93	32
5	Terphenyl-d14	1718-51-0	33-140	90
6	2,4,6-Tribromophenol	118-79-6	10-122	70
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	124
2	Chrysene-d12	1719-03-5	50-200	111
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	118
4	Naphthalene-d8	1146-65-2	50-200	129
5	Perylene-d12	1520-96-3	50-200	108
6	Phenanthrene-d10	1517-22-2	50-200	119
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2521

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3	99SY-MI8m-S-7
99SY-MI8d-W-11.5	99SY-MI8m-W-10.9
99SY-MI8e-S-3	99SY-MI8n-S-1MS
99SY-MI8e-W-13.4	99SY-MI8n-S-1MSD
99SY-MI8i-S-1	99SY-MI8n-W-10.2MS
99SY-MI8i-W-11	99SY-MI8n-W-10.2MSD
99SY-MI8k-S-1	
99SY-MI8k-W-10.2	
99SY-MI8n-S-1	
99SY-MI8n-W-10.2	
99SY-MI8a-S-7	
99SY-MI8a-W-10.9	
99SY-MI8b-S-7**	
99SY-MI8b-W-10.9	
99SY-MI8f-S-4	
99SY-MI8f-W-11	
99SY-MI8h-S-1**	
99SY-MI8h-W-10.8	
99SY-MI8j-S-5	
99SY-MI8j-W-11.7	

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 13 soil samples and 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9, samples 99SY-MI8b-S-7** and 99SY-MI8m-S-7, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, and samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	15:26
Data File Name:	2007.002	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	< 56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	< 110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	< 56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	< 56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	< 56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	< 28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	< 28	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/19/99

2779

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	03:49
Data File Name:	2007.003	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	54
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

2782

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	15:51
Data File Name:	2007.004	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	59	<59	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	120	<120	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	59	<59	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	59	<59	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	59	<59	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	29	<29	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	29	4	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

2785

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	04:14
Data File Name:	2007.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	72
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

2789

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	16:15
Data File Name:	2007.006	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	52	< 52	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	100	< 100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	52	< 52	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	52	< 52	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	52	< 52	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	< 26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	< 26	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

2792

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	04:38
Data File Name:	2007.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	63
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	68
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/99

2795

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	03/09/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	20:03
Data File Name:	2007.108	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	55	<55	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	55	<55	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	55	<55	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	55	<55	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	<27	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	65
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

2798

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	05:03
Data File Name:	2007.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	52
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/1999

2801

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	17:05
Data File Name:	2007.010	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	<54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	<54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	<54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	<54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	<27	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/1999

2804

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	07:29
Data File Name:	2007.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

2807

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	17:29
Data File Name:	2007.015	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	60	<60	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	120	<120	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	60	<60	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	60	<60	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	60	<60	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	30	<30	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	30	<30	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	87
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M1999

2810

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	07:53
Data File Name:	2007.016	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	70
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U.- Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

2813

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	20:06
Data File Name:	2007.018	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	< 54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	< 110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	< 54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	< 54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	< 54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	< 27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	< 27	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	83
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2816

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	08:18
Data File Name:	2007.019	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	79
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w1999

2819

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	20:31
Data File Name:	2007.020	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	59	<59	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	120	<120	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	59	<59	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	59	<59	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	59	<59	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	29	<29	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	29	<29	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	68
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	63
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2822

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	08:43
Data File Name:	2007.021	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	49
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2825

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	20:55
Data File Name:	2007.022	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	<56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	<56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	<56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	<56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	4	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2828

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	09:07
Data File Name:	2007.023	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	63
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2832

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	21:20
Data File Name:	2007.024	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	63	<63	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	130	<130	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	63	<63	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	63	<63	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	63	<63	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	32	<32	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	32	<32	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	64
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

2835

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	09:32
Data File Name:	2007.025	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	49
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	68
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

2838

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-S-7**	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	21:44
Data File Name:	2007.026	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	<54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	<54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	<54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	<54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	<27	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	64
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	64
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

2841

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/25/99	Anal. Date:	02/27/99
Batch No:	99G1666	Prep. No:	1 of 1	Anal. Time:	09:56
Data File Name:	2007.027	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	53
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2844

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3
99SY-MI8e-W-13.4
99SY-MI8i-S-1
99SY-MI8i-W-11
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-MI8a-S-7
99SY-MI8a-W-10.9
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11**
99SY-MI8h-S-1
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7

dup

99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-S-[redacted]
99SY-MI8n-S-1[redacted]

dup

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 13 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	19:12
Data File Name:	2007.002	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w46699

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	00:30
Data File Name:	2007.003	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

MI1699

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	-	Anal. Time:	19:34
Data File Name:	2007.004	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

3088

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	00:55
Data File Name:	2007.005	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	[redacted]	

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	88
# of out-of-control				0

[a]Not a typical Gasoline pattern.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

2/11/99

3090

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	19:56
Data File Name:	2007.006	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	<1.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

3092

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	–	Anal. Time:	01:20
Data File Name:	2007.007	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.03	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M11699

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	20:19
Data File Name:	2007.008	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	01:45
Data File Name:	2007.009	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w/1699

3098

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	-	Anal. Time:	20:41
Data File Name:	2007.010	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3100

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	23:16
Data File Name:	2007.011	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

3102

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	21:03
Data File Name:	2007.015	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	02:10
Data File Name:	2007.016	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

3106

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	-	Anal. Time:	21:25
Data File Name:	2007.018	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/16/99

3108

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	02:35
Data File Name:	2007.019	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	21:47
Data File Name:	2007.020	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M1699

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	–	Anal. Time:	03:00
Data File Name:	2007.021	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a 41699

3114

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	22:53
Data File Name:	2007.022	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

3116

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	03:25
Data File Name:	2007.023	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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3118

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/199
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	-	Anal. Time:	23:16
Data File Name:	2007.024	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	< 1.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w41699

3120

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	-	Anal. Time:	03:50
Data File Name:	2007.025	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w41699

3122

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-S-7**	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	02/25/99	Anal. Date:	02/25/99
Batch No:	99G1652	Prep. No:	–	Anal. Time:	23:38
Data File Name:	2007.026	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

3124

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1668	Prep. No:	–	Anal. Time:	04:14
Data File Name:	2007.027	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3
99SY-MI8e-W-13.4
99SY-MI8i-S-1
99SY-MI8i-W-11
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-MI8a-S-7**
99SY-MI8a-W-10.9
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11
99SY-MI8h-S-1
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7
99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-S-1[illegible]
99SY-MI8n-S-1[illegible]
99SY-MI8n-W-10.2[illegible]
99SY-MI8n-W-10.2[illegible]

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 13 soil samples and 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1690G.L01 (99SY-MI8a-W-10.9 99SY-MI8b-W-10.9 99SY-MI8f-W-11 99SY-MI8h-W-10.8 99SY-MI8j-W-11.7 99SY-MI8m-W-10.9 99G1690-MB-01)	TPH as extractables	131 (57-126)	-	-	J (all detects)	A

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-MI8k-S-1	99SY-MI8n-S-1			
TPH as motor oil	11	11U	200 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2007

SDG	Sample	Compound	Flag	A or P	Reason
99-2007	99SY-MI8a-W-10.9 99SY-MI8b-W-10.9 99SY-MI8f-W-11 99SY-MI8h-W-10.8 99SY-MI8j-W-11.7 99SY-MI8m-W-10.9	TPH as extractables	J (all detects)	A	Laboratory control samples (%R)
99-2007	99SY-MI8k-S-1 99SY-MI8n-S-1	TPH as motor oil	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	20:56
Data File Name:	2007.002	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	66
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/99

3214

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/24/99	Anal. Date:	02/26/99
Batch No:	99G1633	Prep. No:	1 of 1	Anal. Time:	02:51
Data File Name:	2007.003	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

3216

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	21:47
Data File Name:	2007.004	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12		

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3218

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/24/99	Anal. Date:	02/26/99
Batch No:	99G1633	Prep. No:	1 of 1	Anal. Time:	03:16
Data File Name:	2007.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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3220

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	22:12
Data File Name:	2007.006	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/24/99	Anal. Date:	02/26/99
Batch No:	99G1633	Prep. No:	1 of 1	Anal. Time:	03:41
Data File Name:	2007.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	0.3	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	133
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	23:28
Data File Name:	2007.008	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	11	~~J~~ J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

3226

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/24/99	Anal. Date:	02/26/99
Batch No:	99G1633	Prep. No:	1 of 1	Anal. Time:	04:06
Data File Name:	2007.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3228

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	23:53
Data File Name:	2007.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w/1169

3230

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/24/99	Anal. Date:	02/26/99
Batch No:	99G1633	Prep. No:	1 of 1	Anal. Time:	04:31
Data File Name:	2007.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a 4/16/99

3232

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	00:19
Data File Name:	2007.015	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3234

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	09:31
Data File Name:	2007.016	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3236

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	00:45
Data File Name:	2007.018	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

W1680

3238

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	09:57
Data File Name:	2007.019	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/4/99

3240

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	01:10
Data File Name:	2007.020	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

3242

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	10:24
Data File Name:	2007.021	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.5	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11/16/99

3244

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	02:00
Data File Name:	2007.022	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3246

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	11:43
Data File Name:	2007.023	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.5	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	120
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

W41699

3248

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/01/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	16:10
Data File Name:	2007.124	Sample Amount:	20.0 g	Dilution Factor:	5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	63	110	
2	Motor oil		mg/kg	63	590	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	128
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a41689

3250

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	12:09
Data File Name:	2007.025	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w 41689

3252

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-S-7**	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/09/99
Batch No:	99G1680	Prep. No:	1 of 1	Anal. Time:	15:23
Data File Name:	2007.126	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	129
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

3254

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	12:36
Data File Name:	2007.027	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	113
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/69

3256

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 7, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3
99SY-MI8e-W-13.4
99SY-MI8i-S-1
99SY-MI8i-W-11
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-MI8a-S-7**
99SY-MI8a-W-10.9**
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11
99SY-MI8h-S-1
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7
99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-S-1MS
99SY-MI8n-S-1MSD
99SY-MI8n-S-1DUP
99SY-MI8n-W-10.2 MS
99SY-MI8n-W-10.2 MSD
99SY-MI8n-W-10.2 DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 14 soil samples and 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Thallium Vanadium Zinc Molybdenum	2.6 ug/L 2.0 ug/L 0.3 ug/L 0.3 ug/L 0.7 ug/L 1.0 ug/L 2.4 ug/L 2.6 ug/L 3.6 ug/L 0.8 ug/L 4.7 ug/L 1.7 ug/L	All soil samples in SDG 99-2007
PB	Beryllium	0.12 ug/L	All water samples in SDG 99-2007
ICB/CCB	Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Thallium Vanadium Zinc Molybdenum	1.9 ug/L 1.1 ug/L 0.2 ug/L 0.3 ug/L 0.6 ug/L 0.6 ug/L 2.0 ug/L 0.7 ug/L 2.2 ug/L 0.5 ug/L 1.0 ug/L 1.2 ug/L	All water samples in SDG 99-2007

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X

blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-MI8d-S-3	Cadmium	0.050 mg/Kg	0.050U mg/Kg
99SY-MI8i-S-1	Cadmium	0.070 mg/Kg	0.070U mg/Kg
99SY-MI8k-S-1	Cadmium	0.039 mg/Kg	0.039U mg/Kg
99SY-MI8n-S-1	Cadmium	0.063 mg/Kg	0.063U mg/Kg
99SY-MI8a-S-7**	Molybdenum	0.17 mg/Kg	0.17U mg/Kg
99SY-MI8b-S-7	Cadmium	0.024 mg/Kg	0.024U mg/Kg
99SY-MI8f-S-4	Cadmium	0.066 mg/Kg	0.066U mg/Kg
99SY-MI8m-S-7	Cadmium	0.032 mg/Kg	0.032U mg/Kg
99SY-MI8d-W-11.5	Beryllium	0.13 ug/L	0.13U ug/L
99SY-MI8e-W-13.4	Beryllium	0.11 ug/L	0.11U ug/L
99SY-MI8i-W-11	Zinc	2.2 ug/L	2.2U ug/L
99SY-MI8k-W-10.2	Chromium Zinc	0.55 ug/L 2.5 ug/L	0.55U ug/L 2.5U ug/L
99SY-MI8n-W-10.2	Beryllium Copper Nickel	0.091 ug/L 0.95 ug/L 3.4 ug/L	0.091U ug/L 0.95U ug/L 3.4U ug/L
99SY-MI8a-W-10.9**	Cobalt Nickel	2.9 ug/L 2.2 ug/L	2.9U ug/L 2.2U ug/L
99SY-MI8b-W-10.9	Cobalt Copper Nickel	0.97 ug/L 1.2 ug/L 2.4 ug/L	0.97U ug/L 1.2U ug/L 2.4U ug/L
99SY-MI8f-W-11	Vanadium	2.1 ug/L	2.1U ug/L
99SY-MI8h-W-10.8	Copper Nickel	1.0 ug/L 1.1 ug/L	1.0U ug/L 1.1U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-MI8j-W-11.7	Cadmium Nickel Vanadium Molybdenum	0.37 ug/L 2.6 ug/L 0.41 ug/L 2.1 ug/L	0.37U ug/L 2.6U ug/L 0.41U ug/L 2.1U ug/L
99SY-MI8m-W-10.9	Cobalt Nickel	3.0 ug/L 3.1 ug/L	3.0U ug/L 3.1U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-MI8k-S-1	99SY-MI8n-S-1			
Aluminum	0.066U	0.20	200 (≤35)	J	A
Arsenic	4.5	4.5	0 (≤35)	-	-
Barium	82.1	80.8	2 (≤35)	-	-
Cadmium	0.039	0.063	47 (≤35)	J	A
Chromium	16.6	17.7	6 (≤35)	-	-
Cobalt	10.5	9.6	9 (≤35)	-	-
Copper	11.5	10.8	6 (≤35)	-	-
Lead	2.1	2.5	17 (≤35)	-	-
Nickel	13.1	12.6	4 (≤35)	-	-
Vanadium	32.4	31.0	4 (≤35)	-	-
Zinc	49.4	44.4	11 (≤35)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-MI8k-W-10.2	99SY-MI8n-W-10.2			
Barium	82.4	77.7	6 (≤20)	-	-
Beryllium	0.083U	0.091	200 (≤20)	J	A
Chromium	0.55	0.40U	200 (≤20)	J	A
Cobalt	3.5	4.1	16 (≤20)	-	-
Copper	0.69U	0.95	200 (≤20)	J	A
Nickel	4.5	3.4	28 (≤20)	J	A
Selenium	2.0U	3.9	200 (≤20)	J	A
Zinc	2.5	0.83U	200 (≤20)	J	A
Molybdenum	11.3	11.0	3 (≤20)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-MI8b-S-7	99SY-MI8m-S-7			
Antimony	0.34	0.065U	200 (≤35)	J	A
Arsenic	2.9	2.3	23 (≤35)	-	-
Barium	34.6	32.2	7 (≤35)	-	-
Cadmium	0.024	0.032	29 (≤35)	-	-
Chromium	11.7	10.5	11 (≤35)	-	-
Cobalt	5.1	5.0	2 (≤35)	-	-
Copper	4.4	4.6	4 (≤35)	-	-
Lead	16.4	1.7	162 (≤35)	J	A
Nickel	5.8	6.9	17 (≤35)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-MI8b-S-7	99SY-MI8m-S-7			
Vanadium	35.0	19.7	56 (≤35)	J	A
Zinc	30.9	21.6	35 (≤35)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-MI8b-W-10.9	99SY-MI8m-W-10.9			
Barium	87.6	87.4	0.2 (≤20)	-	-
Cobalt	0.97	3.0	102 (≤20)	J	A
Copper	1.2	0.69U	200 (≤20)	J	A
Lead	4.3	0.85U	200 (≤20)	J	A
Nickel	2.4	3.1	25 (≤20)	J	A
Selenium	2.0U	2.3	200 (≤20)	J	A
Zinc	5.8	5.1	13 (≤20)	-	-
Molybdenum	9.7	10.2	5 (≤20)	-	-

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2007

SDG	Sample	Analyte	Flag	A or P	Reason
99-2007	99SY-MI8k-S-1 99SY-MI8n-S-1	Aluminum Cadmium	J J	A	Field duplicates (RPD)
99-2007	99SY-MI8k-W-10.2 99SY-MI8n-W-10.2	Beryllium Chromium Copper Nickel Selenium Zinc	J J J J J J	A	Field duplicates (RPD)
99-2007	99SY-MI8b-S-7 99SY-MI8m-S-7	Antimony Lead Vanadium	J J J	A	Field duplicates (RPD)
99-2007	99SY-MI8b-W-10.9 99SY-MI8m-W-10.9	Cobalt Copper Lead Nickel Selenium	J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2007

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2007	99SY-MI8d-S-3	Cadmium	0.050U mg/Kg	A
99-2007	99SY-MI8i-S-1	Cadmium	0.070U mg/Kg	A
99-2007	99SY-MI8k-S-1	Cadmium	0.039U mg/Kg	A
99-2007	99SY-MI8n-S-1	Cadmium	0.063U mg/Kg	A
99-2007	99SY-MI8a-S-7**	Molybdenum	0.17U mg/Kg	A
99-2007	99SY-MI8b-S-7	Cadmium	0.024U mg/Kg	A
99-2007	99SY-MI8f-S-4	Cadmium	0.066U mg/Kg	A
99-2007	99SY-MI8m-S-7	Cadmium	0.032U mg/Kg	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2007	99SY-MI8d-W-11.5	Beryllium	0.13U ug/L	A
99-2007	99SY-MI8e-W-13.4	Beryllium	0.11U ug/L	A
99-2007	99SY-MI8i-W-11	Zinc	2.2U ug/L	A
99-2007	99SY-MI8k-W-10.2	Chromium Zinc	0.55U ug/L 2.5U ug/L	A
99-2007	99SY-MI8n-W-10.2	Beryllium Copper Nickel	0.091U ug/L 0.95U ug/L 3.4U ug/L	A
99-2007	99SY-MI8a-W-10.9**	Cobalt Nickel	2.9U ug/L 2.2U ug/L	A
99-2007	99SY-MI8b-W-10.9	Cobalt Copper Nickel	0.97U ug/L 1.2U ug/L 2.4U ug/L	A
99-2007	99SY-MI8f-W-11	Vanadium	2.1U ug/L	A
99-2007	99SY-MI8h-W-10.8	Copper Nickel	1.0U ug/L 1.1U ug/L	A
99-2007	99SY-MI8j-W-11.7	Cadmium Nickel Vanadium Molybdenum	0.37U ug/L 2.6U ug/L 0.41U ug/L 2.1U ug/L	A
99-2007	99SY-MI8m-W-10.9	Cobalt Nickel	3.0U ug/L 3.1U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-2	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-S-3**	Sample Matrix	Soil	Moisture %:	10.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.25	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	3.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	53.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0047	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.050	~~B~~	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	12.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	6.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	7.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	2.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.023	B	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.027	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	8.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	< 0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.078	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	25.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	29.1		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/5/99

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-3	Received Date:	02/24/1999
Sample ID:	**99SY-MI8D-W-11.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	137		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.13	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.2	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	8.8		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	5.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-4	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-S-3**	Sample Matrix	Soil	Moisture %:	14.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.9	0.44	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.35	3.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	186		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0049	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.14	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.59	21.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.59	15.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.59	15.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.35	3.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	< 0.057	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.028	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.35	20.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.59	< 0.12	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.59	< 0.019	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.9	< 0.082	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.59	32.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.59	43.9		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

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Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-5	Received Date:	02/24/1999
Sample ID:	**99SY-MI8E-W-13.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	153		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.11	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.7	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.2		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	6.2		P		99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	4.0	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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3400

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-6	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-S-1**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	0.32	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	3.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	61.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	<0.0043	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.070	B	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	17.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	6.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	7.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	5.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	<0.051	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	<0.025	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	16.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	<0.10	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	<0.017	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	<0.072	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	26.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	29.3		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-7	Received Date:	02/24/1999
Sample ID:	**99SY-MI8I-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	74.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.2	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	10		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	6.5		P		99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.4	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	2.2	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/5/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-8	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-S-1**	Sample Matrix	Soil	Moisture %:	8.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	<0.066	~~U~~	P	UJ	99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	4.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	82.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0046	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.039	~~B~~	P	UJ	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	16.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	10.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	11.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	2.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	<0.054	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.026	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	13.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	<0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	<0.017	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	<0.077	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	32.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	49.4		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-9	Received Date:	02/24/1999
Sample ID:	**99SY-MI8K-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	82.4		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	0.55	B	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.5	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	11.3		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.5	B	P	J	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	2.5	B	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/15/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-10	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-S-1**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	0.20	~~B~~	P	J	99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	4.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	80.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0045	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.063	~~B~~	P	UJ	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	17.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	9.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	10.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	2.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	< 0.053	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.026	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	12.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	< 0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	< 0.017	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	< 0.076	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	31.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	44.4		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-11	Received Date:	02/24/1999
Sample ID:	**99SY-MI8N-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	77.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.091	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	4.1	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	0.95	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	11.0		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.4	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.9	~~B~~	P	J	99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	~~U~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-15	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-S-7**	Sample Matrix	Soil	Moisture %:	17.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.0	0.77	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	13.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	171		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	<0.0051	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.23	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.60	39.3		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.60	19.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.60	47.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	10.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	0.074	B	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	0.17	B	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	29.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.60	<0.12	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.60	<0.019	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	6.0	<0.085	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.60	69.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.60	93.4		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-16	Received Date:	02/24/1999
Sample ID:	**99SY-MI8A-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	80.5		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	2.9	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	7.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.2	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	2.4	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-18	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-S-7**	Sample Matrix	Soil	Moisture %:	7.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	0.34	~~B~~	P	J	99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	34.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0045	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.024	~~B~~	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	11.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	5.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	4.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	16.4		P	J	99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	<0.053	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.026	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	5.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	<0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.017	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.075	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	35.0		P	J	99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	30.9		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-19	Received Date:	02/24/1999
Sample ID:	**99SY-MI8B-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	87.6		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.97	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	1.2	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	4.3	~~B~~	P	J	99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	9.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.4	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	~~U~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	5.8		P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-20	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-S-4**	Sample Matrix	Soil	Moisture %:	14.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.9	0.56	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.35	5.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	86.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0049	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.066	B	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.59	17.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.59	9.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.59	11.1		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.35	2.3		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	< 0.057	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.028	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.35	13.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.59	< 0.12	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.59	< 0.019	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.9	< 0.082	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.59	31.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.59	45.7		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-21	Received Date:	02/24/1999
Sample ID:	**99SY-MI8F-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	137		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.4	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.7		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	5.9		P		99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	2.4	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	3.1	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	2.1	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-22	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-S-1**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.21	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	5.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	110		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0047	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.099	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	17.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	9.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	14.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	4.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.019	B	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.027	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	14.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	< 0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.078	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	37.4		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	43.5		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-23	Received Date:	02/24/1999
Sample ID:	**99SY-MI8H-W-10.8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	58.4		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	1.0	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	7.3		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	1.1	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	8.9	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	6.8		P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-24	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-S-5**	Sample Matrix	Soil	Moisture %:	21.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.3	1.2	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.38	10		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.3	132		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.25	<0.0053	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.25	0.19	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.63	54.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.63	14.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.63	25.3		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.38	8.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.25	<0.062	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.25	1.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.38	31.7		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.63	0.61	B	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.63	<0.020	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	6.3	<0.089	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.63	49.8		P		99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.63	73.7		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-25	Received Date:	02/24/1999
Sample ID:	**99SY-MI8J-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	141		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	0.37	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	2.1	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.6	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.7	B	P		99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	0.41	~~B~~	P	U	99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-26	Received Date:	02/24/1999
Sample ID:	99SY-MI8M-S-7	Sample Matrix	Soil	Moisture %:	7.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	<0.065	U	P	UJ	99M1319M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.3		P		99M1319M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	32.2		P		99M1319M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0045	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.032	B	P	U	99M1319M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	10.5		P		99M1319M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	5.0		P		99M1319M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	4.6		P		99M1319M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1.7		P	J	99M1319M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	<0.053	U	CV		99M1327N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.026	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	6.9		P		99M1319M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	<0.11	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.017	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.075	U	P		99M1319M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	19.7		P	J	99M1319M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	21.6		P		99M1319M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/24/1999
Project ID:	LBNSY Group B AOCs	Service ID:	992007	Collected by:	BB/DB
		Lab Sample ID:	99-2007-27	Received Date:	02/24/1999
Sample ID:	**99SY-MI8M-W-10.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Barium	7440-39-3	µg/L	10	87.4		P		99M1318M	03/01/99	03/01/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.0	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	~~U~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1323N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	10.2		P		99M1318M	03/01/99	03/01/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.1	~~B~~	P	UJ	99M1318M	03/01/99	03/01/99	1	6010C
Selenium	7782-49-2	µg/L	10	2.3	~~B~~	P	J	99M1318M	03/01/99	03/01/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1318M	03/01/99	03/01/99	1	6010C
Zinc	7440-66-6	µg/L	5	5.1		P		99M1318M	03/01/99	03/01/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/15/99

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 23 through February 24, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Wet Chemistry

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2007

Sample Identification

99SY-MI8d-S-3
99SY-MI8d-W-11.5
99SY-MI8e-S-3*
99SY-MI8e-W-13.4*
99SY-MI8i-S-1
99SY-MI8i-W-11
99SY-MI8k-S-1
99SY-MI8k-W-10.2
99SY-MI8n-S-1
99SY-MI8n-W-10.2
99SY-HI2a-S-7**
99SY-HI2a-W-11**
99SY-MI8a-S-7
99SY-MI8a-W-10.9
99SY-MI8b-S-7
99SY-MI8b-W-10.9
99SY-MI8f-S-4
99SY-MI8f-W-11
99SY-MI8h-S-1
99SY-MI8h-W-10.8
99SY-MI8j-S-5
99SY-MI8j-W-11.7
99SY-MI8m-S-7
99SY-MI8m-W-10.9
99SY-MI8n-S-1MS
99SY-MI8n-S-1MSD
99SY-MI8n-S-1DUP
99SY-MI8n-W-10.2MS
99SY-MI8n-W-10.2MSD
99SY-MI8n-W-10.2DUP

*Indicates sample underwent NFESC Level D review for Cyanide
**Indicates sample underwent NFESC Level D review for pH

Introduction

This data review covers 15 soil samples and 15 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9010 for Cyanide and EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
99SY-MI8d-S-3 99SY-MI8e-S-3* 99SY-MI8i-S-1 99SY-MI8k-S-1 99SY-MI8n-S-1 99SY-HI2a-S-7** 99SY-HI2a-W-11** 99SY-MI8a-S-7 99SY-MI8b-S-7 99SY-MI8f-S-4 99SY-MI8h-S-1 99SY-MI8j-S-5 99SY-MI8m-S-7	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-MI8k-S-1 and 99SY-MI8n-S-1, samples 99SY-MI8k-W-10.2 and 99SY-MI8n-W-10.2, samples 99SY-MI8b-S-7 and 99SY-MI8m-S-7, and samples 99SY-MI8b-W-10.9 and 99SY-MI8m-W-10.9 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (pH units)		RPD (Limits)	Flag	A or P
	99SY-MI8k-S-1	99SY-MI8n-S-1			
pH	8.68	8.81	1 (≤35)	-	-

Analyte	Concentration (pH units)		RPD (Limits)	Flag	A or P
	99SY-MI8b-S-7	99SY-MI8m-S-7			
pH	8.24	8.49	3 (≤35)	-	-

Long Beach Naval Shipyard
Wet Chemistry - Data Qualification Summary - SDG 99-2007

SDG	Sample	Analyte	Flag	A or P	Reason
99-2007	99SY-MI8d-S-3 99SY-MI8e-S-3* 99SY-MI8i-S-1 99SY-MI8k-S-1 99SY-MI8n-S-1 99SY-HI2a-S-7** 99SY-HI2a-W-11** 99SY-MI8a-S-7 99SY-MI8b-S-7 99SY-MI8f-S-4 99SY-MI8h-S-1 99SY-MI8j-S-5 99SY-MI8m-S-7	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Wet Chemistry - Field Blank Data Qualification Summary - SDG 99-2007

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Wet Analysis Results for Method 9010

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9010
Project ID: LBNSY Group B AOCs Service ID: 992007 Collected by: BB/DB

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2007-2	99SY-MI8D-S-3	Soil	02/23/99	02/24/99	03/01/99	99W2178	mg/kg	2.8	<2.8	U
99-2007-3	99SY-MI8D-W-11.5	Water	02/23/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-4	99SY-MI8E-S-3	Soil	02/23/99	02/24/99	03/01/99	99W2178	mg/kg	2.9	<2.9	U
99-2007-5	99SY-MI8E-W-13.4	Water	02/23/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-6	99SY-MI8I-S-1	Soil	02/23/99	02/24/99	03/01/99	99W2178	mg/kg	2.6	<2.6	U
99-2007-7	99SY-MI8I-W-11	Water	02/23/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-8	99SY-MI8K-S-1	Soil	02/23/99	02/24/99	03/01/99	99W2178	mg/kg	2.7	<2.7	U
99-2007-9	99SY-MI8K-W-10.2	Water	02/23/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-10	99SY-MI8N-S-1	Soil	02/23/99	02/24/99	03/01/99	99W2178	mg/kg	2.7	<2.7	U
99-2007-11	99SY-MI8N-W-10.2	Water	02/23/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-15	99SY-MI8A-S-7	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	3.0	<3.0	U
99-2007-16	99SY-MI8A-W-10.9	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-18	99SY-MI8B-S-7	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	2.7	<2.7	U
99-2007-19	99SY-MI8B-W-10.9	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-20	99SY-MI8F-S-4	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	2.9	<2.9	U
99-2007-21	99SY-MI8F-W-11	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-22	99SY-MI8H-S-1	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	2.8	<2.8	U
99-2007-23	99SY-MI8H-W-10.8	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-24	99SY-MI8J-S-5	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	3.2	<3.2	U
99-2007-25	99SY-MI8J-W-11.7	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99-2007-26	99SY-MI8M-S-7	Soil	02/24/99	02/24/99	03/01/99	99W2178	mg/kg	2.7	<2.7	U
99-2007-27	99SY-MI8M-W-10.9	Water	02/24/99	02/24/99	02/25/99	99W2077	mg/L	0.05	<0.05	U
99W2178-MB-01		Soil	03/01/99	03/01/99	03/01/99	99W2178	mg/kg	2.5	<2.5	U
99W2077-MB-01		Water	02/25/99	02/25/99	02/25/99	99W2077	mg/L	0.05	<0.05	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/8/99

3592

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: LBNSY Group B AOCs Service ID: 992007 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2007-2	99SY-MI8D-S-3	Soil	02/23/99	02/24/99	02/24/99	99W2060	pH unit	0.01	8.51	
99-2007-4	99SY-MI8E-S-3	Soil	02/23/99	02/24/99	02/24/99	99W2060	pH unit	0.01	9.14	
99-2007-6	99SY-MI8I-S-1	Soil	02/23/99	02/24/99	02/24/99	99W2060	pH unit	0.01	8.82	
99-2007-8	99SY-MI8K-S-1	Soil	02/23/99	02/24/99	02/24/99	99W2060	pH unit	0.01	8.68	
99-2007-10	99SY-MI8N-S-1	Soil	02/23/99	02/24/99	02/24/99	99W2060	pH unit	0.01	8.81	
99-2007-13	99SY-HI2A-S-7	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.62	
99-2007-14	99SY-HI2A-W-11	Water	02/24/99	02/24/99	02/25/99	99W2084	pH unit	0.01	7.65	
99-2007-15	99SY-MI8A-S-7	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.62	
99-2007-18	99SY-MI8B-S-7	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.24	
99-2007-20	99SY-MI8F-S-4	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	7.88	
99-2007-22	99SY-MI8H-S-1	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.44	
99-2007-24	99SY-MI8J-S-5	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.73	
99-2007-26	99SY-MI8M-S-7	Soil	02/24/99	02/24/99	03/02/99	99W2216	pH unit	0.01	8.49	
99W2060-MB-01		Soil	02/24/99	02/24/99	02/24/99	99W2060	pH unit	0.01	6.07	
99W2216-MB-01		Soil	03/02/99	03/02/99	03/02/99	99W2216	pH unit	0.01	6.10	
99W2084-MB-01		Water	02/25/99	02/25/99	02/25/99	99W2084	pH unit	0.01	6.11	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

3593

Cooler 1-02-23-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA, KANSAS

Project Name/Code LINDSAY GRAD B NOCS Job # 6210-014 P.O. #

Project Address 6210-014 APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: BBoyd, D. Bjostad

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	PCBs 8082	METALS 6010C	TPH-Ext. 8015M	TPH-P&T 8015M	CYANIDE 9010A	Remarks
	995Y-MI8i-S-1	2/23/99	11:11	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8i-W-11	2/23/99	1130	WATER	YES	9	X	X	X	X	X	X	X	
	995Y-MI8K-S-1	2/23/99	1230	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8K-W-10.2	2/23/99	~~1250~~ 1255	WATER	YES	9	X	X	X	X	X	X	X	
	995Y-MI8n-S-1	2/23/99	1235	Soil	4°C	4	X	X	X	X	X	X	X	MS/MSD
	995Y-MI8n-W-10.2	2/23/99	1305	WATER	YES	18	X	X	X	X	X	X	X	MS/MSD
	995Y-MI8d-S-3	2/23/99	1430	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8d-W-11.5	2/23/99	1445	Water	Yes	9	X	X	X	X	X	X	X	
	995Y-MI8e-S-3	2/23/99	~~1510~~ 1530	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8C-W-13.4	2/23/99	1540	Water	Yes	9	X	X	X	X	X	X	X	
	995Y-BT1n-W-10	2/23/99		water	HCl	2	X							Added to COC form 2-23-99 1930, In cooler already.
	BBoyd D. Bjostad													

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ APCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by BBoyd Date/Time 2/23/99 1730 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Applied P & Ch Laboratory

APCL

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Chain of Custody

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Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619-235-9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA KANSAS

Project Name/Code CONSENTACS, Group B Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: BBoyd, D. Bjostad

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	SVOCs 8270C	PCBs 8082	TPH-extractable 8015	Remarks
	995Y-MIBm-W-10.2	2/23/99	1305	Water	4°C	9	X	X	X	MS/MSD
	BBoyd Dave Bjostad									

Analysis Items

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by BBoyd Date/Time 2/23/99 / 1730 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients und[illegible]d that all terms described in the proposals, quotations for this project, and/or t[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]es the right to terminat[illegible]ervice or withhold delivery of any reports, if in APCL's sole discretion the terms [illegible] project have been broken.

Cooler 1-02-24-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs Naval Job # 6210-014 P.O. #

Project Address 6210-014 Long Beach, Shipyard APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: BB, D. Bjostad

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	VOCs 8260B	SVOCs 8270C	PCBs 8082	Metals 6010C	TPH-ext 8015m	TPH-P&T 8015m	Cyanide 9010A	Remarks
	995Y-MI8f-S-4	2/24/99	0815	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8f-W-11	2-24-99	0830	Water	yes	9	X	X	X	X	X	X	X	
	995Y-MI8a-S-7	2/24/99	0915	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8a-W-10.9	2/24/99	0930	WATER	Yes	9	X	X	X	X	X	X	X	
	995Y-BT10-W-10	2/24/99	1000	Water	HCl	2	X							
	995Y-MI8b-S-7	2/24/99	1030	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8b-W-10.9	2/24/99	1100	WATER	YES	9	X	X	X	X	X	X	X	
	995Y-MI8m-S-7	2/24/99	1035	SOIL	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8m-W-10.9	2/24/99	1105	Water	YES	9	X	X	X	X	X	X	X	
	995Y-MI8h-S-1	2/24/99	1145	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8h-W-10.8	2/24/99	1215	WATER	YES/HCl	4	X					X		
	995Y-MI8;-W-11.7	2/24/99	1305	Water	yes/HCl	4	X					X		
	995Y-MI8;-S-5	2/24/99	1250	Soil	4°C	2	X	X	X	X	X	X	X	
	ISS-d D. Bjostad													

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D) ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by D. Bjostad Date/Time 2-24-99 /1630 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Cooler 2-02-24-99

Applied P & Ch Laboratory

APCL

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Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619 268-9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA, KANSAS

Project Name/Code LENEXA Group BAOC, Job # 6R10-014 P.O. #

Project Address Long Beach Naval Shipyard, CA APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: BB-rd, DBjostad

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	SVOCs 8270C	PCBs 8082	Metals 6010C	TPH-extractable 8015m	Cyanide 9010M	pH 9040	pH 9045B					Remarks
	995Y-MI8h-W-10.8	2/24/99	1215	Water	Yes	5	X	X	X	X	X							
	995Y-MI8j-W-11.7	2/24/99	1305	Water	Yes	5	X	X	X	X	X							
	~~995Y-HI2a-W~~		~~1450~~															BB-rd
	~~995Y-HI2a-S-7~~	2/24/99	~~1450~~	~~Soil~~	~~4°C~~	2						X						BB-rd
	995Y-HI2a-W-11	2/24/99	1505	WATER	4°C	1						X						
	995Y-HI2a-S-7	2/24/99	1450	Soil	4°C	1							X					

BB-rd D Bjostad

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D) ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by D. Bjostad Date/Time 2-24-99 / 1630 Received by _____ Date/Time / _____

Relinquished by _____ Date/Time / Received by _____ Date/Time / _____

APCL USE ONLY Service # _____ Note: _____

Clients unde[r]stand that all terms described in the proposals, quotations for this project, and/or th[e] general terms provided in the current APCL price schedules will be followed. APCL [re]serves the right to terminate service or withhold delivery of any reports, if in APCL's sole discretion the terms [of] project have been broken.

APCL Form 4-101, Ver. 4.0, Dec. 20, 1994. Root-file:[CUST.DATA.LAB]CHAIN_ROOT.TEX File:[CUST.DATA.LAB]CHAIN4.TEX

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-AD4a-S-2
99SY-AD4a-W-10.8
99SY-BT1p-W-10
99SY-HI8a-S-1
99SY-HI8a-W-11.4**
99SY-HI8b-S-1
99SY-HI8b-W-10.1**
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-US2a-S-7.5
99SY-US2a-W-9.6
99SY-US4a-S-8
99SY-US4a-W-11.3
99SY-US4b-S-6
99SY-US4b-W-8.1
99SY-HI8d-S-1MS
99SY-HI8d-S-1MSD
99SY-HI8d-W-11.4MS
99SY-HI8d-W-11.4MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
2/12/99	Bromomethane	39.18	All water samples in SDG 99-2065	J	A

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/3/99 (G1760Q01)	Chloroethane	28.0	99SY-HI8c-W-11.4	J	A
	Carbon tetrachloride	81.8	99SY-HI8d-W-11.4		
	1,2,3-Trichloropropane	25.7	99G1760-MB-01		

Date	Compound	%D	Associated Samples	Flag	A or P
3/3/99 (G1760Q02)	Chloroethane Carbon tetrachloride	30.9 82.7	99SY-AD4a-W-10.8 99SY-BT1p-W-10 99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1** 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1 99SY-HI8d-W-11.4MS 99SY-HI8d-W-11.4MSD	J J	A

All of the continuing calibration RRF values were within validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
3/3/99 (G1760Q01)	Carbon tetrachloride	0.049 (≥0.05)	99SY-HI8c-W-11.4 99SY-HI8d-W-11.4 99G1760-MB-01	J (all detects) R (all non-detects)	A
3/3/99 (G1760Q02)	Carbon tetrachloride	0.046 (≥0.05)	99SY-AD4a-W-10.8 99SY-BT1p-W-10 99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1** 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1 99SY-HI8d-W-11.4MS 99SY-HI8d-W-11.4MSD	J (all detects) R (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1p-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1p-W-10	2/25/99	Chloroform	13 ug/L	All samples in SDG 99-2065

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-HI8a-W-11.4** and 99SY-HI8d-W-11.4 and samples 99SY-HI8a-S-1 and 99SY-HI8d-S-1 were identified as field duplicates. No volatiles were detected in any of the samples.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2065

SDG	Sample	Compound	Flag	A or P	Reason
99-2065	99SY-AD4a-W-10.8 99SY-BT1p-W-10 99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1** 99SY-HI8c-W-11.4 99SY-HI8d-W-11.4 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1	Bromomethane	J	A	Initial calibration (%RSD)
99-2065	99SY-HI8c-W-11.4 99SY-HI8d-W-11.4	Chloroethane Carbon tetrachloride 1,2,3-Trichloropropane	J J J	A	Continuing calibration (%D)
99-2065	99SY-AD4a-W-10.8 99SY-BT1p-W-10 99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1** 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1	Chloroethane Carbon tetrachloride	J J	A	Continuing calibration (%D)
99-2065	99SY-HI8c-W-11.4 99SY-HI8d-W-11.4 99SY-AD4a-W-10.8 99SY-BT1p-W-10 99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1** 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1	Carbon tetrachloride	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-1	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-S-2**	Sample Matrix	Soil	Moisture %:	13.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	–	Anal. Time:	02:24
Data File Name:	2065-01	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	U
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	U
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	U
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	<5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	<5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	<5.8	U
43	Styrene	100-42-5	µg/kg	5.8	<5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	<5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	<5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	<5.8	U
47	Toluene	108-88-3	µg/kg	5.8	<5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	<5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	<5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	<5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	<5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	<5.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	<5.8	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	<5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	<5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	<5.8	U
57	Vinyl chloride	75-01-4	µg/kg	5.8	<5.8	U
58	o-Xylene	95-47-6	µg/kg	5.8	<5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	<5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	<5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	90
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	92
4	Toluene-d8	2037-26-5	80-119	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	98
3	Fluorobenzene	462-06-6	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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4/18/97

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-2	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	06:33
Data File Name:	2065-02A	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ ~~UJ~~R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	~~U~~ UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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M4139

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	104
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	105
4	Toluene-d8	2037-26-5	81-118	112
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	106
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

WUSA 4025

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-3	Received Date:	02/25/1999
Sample ID:	**99SY-BT1P-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	–	Anal. Time:	04:22
Data File Name:	2065-03	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	~~U~~ UJ
14	Chloroform	67-66-3	µg/L	5	13	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	105
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	99
4	Toluene-d8	2037-26-5	81-118	108
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	90
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-4	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-S-1	Sample Matrix	Soil	Moisture %:	7.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	02:55
Data File Name:	2065-04	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	92
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	95
4	Toluene-d8	2037-26-5	80-119	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-5	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-W-11.4 [a]	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	04:56
Data File Name:	2065-05	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	UJ
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	R
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	UJ
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	92
2	Dibromofluoromethane	1868-53-7	79-120	93
3	1,2-Dichloroethane-d4	17060-07-0	81-119	94
4	Toluene-d8	2037-26-5	81-118	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	78
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	80
# of out-of-control				0

[a]Sample contained 358 ug/L of MTBE.

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-6	Received Date:	02/25/1999
Sample ID:	99SY-MI8B-S-1	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	03:25
Data File Name:	2065-06	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	97
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
3	Fluorobenzene	462-06-6	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-7	Received Date:	02/25/1999
Sample ID:	**99SY-MI8B-W-10.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	05:30
Data File Name:	2065-07	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	UJ
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	UR
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	UJ
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	6	
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	94
2	Dibromofluoromethane	1868-53-7	79-120	101
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	88
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
3	Fluorobenzene	462-06-6	50-200	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-8	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-S-1	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	03:56
Data File Name:	2065-08	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	102
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	85
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
3	Fluorobenzene	462-06-6	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-9	Received Date:	02/25/1999
Sample ID:	99SY-~~M~~I8C-W-11.4 [a]	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	20:38
Data File Name:	2065-09	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	~~U~~ UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	~~U~~ UJ
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	108
2	Dibromofluoromethane	1868-53-7	79-120	111
3	1,2-Dichloroethane-d4	17060-07-0	81-119	106
4	Toluene-d8	2037-26-5	81-118	108
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	80
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	81
3	Fluorobenzene	462-06-6	50-200	79
# of out-of-control				0

[a]Sample contained 115 ug/L of MTBW.

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-10	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-S-1	Sample Matrix	Soil	Moisture %:	11.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	–	Anal. Time:	04:26
Data File Name:	2065-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	U
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	< 5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	< 5.7	U
42	n-Propylbenzene	103-65-1	µg/kg	5.7	< 5.7	U
43	Styrene	100-42-5	µg/kg	5.7	< 5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	< 5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	< 5.7	U
46	Tetrachloroethene	127-18-4	µg/kg	5.7	< 5.7	U
47	Toluene	108-88-3	µg/kg	5.7	< 5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	< 5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	< 5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	< 5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	< 5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	< 5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	< 5.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	< 5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	< 5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	< 5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	< 5.7	U
58	o-Xylene	95-47-6	µg/kg	5.7	< 5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	< 5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	< 5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	100
3	1,2-Dichloroethane-d4	17060-07-0	75-129	107
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	83
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-11	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-W-11.4 [a]	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	21:12
Data File Name:	2065-11	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U UJ
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	106
2	Dibromofluoromethane	1868-53-7	79-120	85
3	1,2-Dichloroethane-d4	17060-07-0	81-119	86
4	Toluene-d8	2037-26-5	81-118	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	83
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

[a]Sample contained 253 ug/L of MTBE.

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-12	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-S-7.5**	Sample Matrix	Soil	Moisture %:	18.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	04:57
Data File Name:	2065-12	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.1	<6.1	U
2	Bromobenzene	108-86-1	µg/kg	6.1	<6.1	U
3	Bromochloromethane	74-97-5	µg/kg	6.1	<6.1	U
4	Bromodichloromethane	75-27-4	µg/kg	6.1	<6.1	U
5	Bromoform	75-25-2	µg/kg	6.1	<6.1	U
6	Bromomethane	74-83-9	µg/kg	6.1	<6.1	U
7	n-Butylbenzene	104-51-8	µg/kg	6.1	<6.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.1	<6.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.1	<6.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.1	<6.1	U
11	Chlorobenzene	108-90-7	µg/kg	6.1	<6.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.1	<6.1	U
13	Chloroethane	75-00-3	µg/kg	6.1	<6.1	U
14	Chloroform	67-66-3	µg/kg	6.1	<6.1	U
15	Chloromethane	74-87-3	µg/kg	6.1	<6.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.1	<6.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.1	<6.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.1	<6.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.1	<6.1	U
20	Dibromomethane	74-95-3	µg/kg	6.1	<6.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.1	<6.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.1	<6.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.1	<6.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.1	<6.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.1	<6.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.1	<6.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.1	<6.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.1	<6.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.1	<6.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.1	<6.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.1	<6.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.1	<6.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.1	<6.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.1	<6.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.1	<6.1	U
36	Ethylbenzene	100-41-4	µg/kg	6.1	<6.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.1	<6.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.1	<6.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.1	<6.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.1	<6.1	U
41	Naphthalene	91-20-3	µg/kg	6.1	<6.1	U
42	n-Propylbenzene	103-65-1	µg/kg	6.1	<6.1	U
43	Styrene	100-42-5	µg/kg	6.1	<6.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.1	<6.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.1	<6.1	U
46	Tetrachloroethene	127-18-4	µg/kg	6.1	<6.1	U
47	Toluene	108-88-3	µg/kg	6.1	<6.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.1	<6.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.1	<6.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.1	<6.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.1	<6.1	U
52	Trichloroethene	79-01-6	µg/kg	6.1	<6.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.1	<6.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.1	<6.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.1	<6.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.1	<6.1	U
57	Vinyl chloride	75-01-4	µg/kg	6.1	<6.1	U
58	o-Xylene	95-47-6	µg/kg	6.1	<6.1	U
59	m/p-Xylene	108-38-3	µg/kg	6.1	<6.1	U
60	Xylenes (total)	1330-20-7	µg/kg	6.1	<6.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	108
4	Toluene-d8	2037-26-5	80-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	81
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-13	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	02:10
Data File Name:	2065-13	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	~~U~~ UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	103
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	100
4	Toluene-d8	2037-26-5	81-118	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-14	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-S-8**	Sample Matrix	Soil	Moisture %:	22.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	05:27
Data File Name:	2065-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.5	<6.5	U
2	Bromobenzene	108-86-1	µg/kg	6.5	<6.5	U
3	Bromochloromethane	74-97-5	µg/kg	6.5	<6.5	U
4	Bromodichloromethane	75-27-4	µg/kg	6.5	<6.5	U
5	Bromoform	75-25-2	µg/kg	6.5	<6.5	U
6	Bromomethane	74-83-9	µg/kg	6.5	<6.5	U
7	n-Butylbenzene	104-51-8	µg/kg	6.5	<6.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.5	<6.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.5	<6.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.5	<6.5	U
11	Chlorobenzene	108-90-7	µg/kg	6.5	<6.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.5	<6.5	U
13	Chloroethane	75-00-3	µg/kg	6.5	<6.5	U
14	Chloroform	67-66-3	µg/kg	6.5	<6.5	U
15	Chloromethane	74-87-3	µg/kg	6.5	<6.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.5	<6.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.5	<6.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.5	<6.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.5	<6.5	U
20	Dibromomethane	74-95-3	µg/kg	6.5	<6.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.5	<6.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.5	<6.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.5	<6.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.5	<6.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.5	<6.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.5	<6.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.5	<6.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.5	<6.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.5	<6.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.5	<6.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.5	<6.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.5	<6.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.5	<6.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.5	<6.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.5	<6.5	U
36	Ethylbenzene	100-41-4	µg/kg	6.5	<6.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.5	<6.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.5	<6.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.5	<6.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.5	<6.5	U
41	Naphthalene	91-20-3	µg/kg	6.5	<6.5	U
42	n-Propylbenzene	103-65-1	µg/kg	6.5	<6.5	U
43	Styrene	100-42-5	µg/kg	6.5	<6.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.5	<6.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.5	<6.5	U
46	Tetrachloroethene	127-18-4	µg/kg	6.5	<6.5	U
47	Toluene	108-88-3	µg/kg	6.5	<6.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.5	<6.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.5	<6.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.5	<6.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.5	<6.5	U
52	Trichloroethene	79-01-6	µg/kg	6.5	<6.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.5	<6.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.5	<6.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.5	<6.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.5	<6.5	U
57	Vinyl chloride	75-01-4	µg/kg	6.5	<6.5	U
58	o-Xylene	95-47-6	µg/kg	6.5	<6.5	U
59	m/p-Xylene	108-38-3	µg/kg	6.5	<6.5	U
60	Xylenes (total)	1330-20-7	µg/kg	6.5	<6.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	102
3	1,2-Dichloroethane-d4	17060-07-0	75-129	106
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	78
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	71
3	Fluorobenzene	462-06-6	50-200	76
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-15	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-W-11.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	02:44
Data File Name:	2065-15	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	~~U~~ R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	~~U~~ UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	103
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	105
4	Toluene-d8	2037-26-5	81-118	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	96
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-16	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-S-6**	Sample Matrix	Soil	Moisture %:	22.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	02/27/99	Anal. Date:	02/27/99
Batch No:	99G1688	Prep. No:	-	Anal. Time:	05:58
Data File Name:	2065-16	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.5	<6.5	U
2	Bromobenzene	108-86-1	µg/kg	6.5	<6.5	U
3	Bromochloromethane	74-97-5	µg/kg	6.5	<6.5	U
4	Bromodichloromethane	75-27-4	µg/kg	6.5	<6.5	U
5	Bromoform	75-25-2	µg/kg	6.5	<6.5	U
6	Bromomethane	74-83-9	µg/kg	6.5	<6.5	U
7	n-Butylbenzene	104-51-8	µg/kg	6.5	<6.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.5	<6.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.5	<6.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.5	<6.5	U
11	Chlorobenzene	108-90-7	µg/kg	6.5	<6.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.5	<6.5	U
13	Chloroethane	75-00-3	µg/kg	6.5	<6.5	U
14	Chloroform	67-66-3	µg/kg	6.5	<6.5	U
15	Chloromethane	74-87-3	µg/kg	6.5	<6.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.5	<6.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.5	<6.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.5	<6.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.5	<6.5	U
20	Dibromomethane	74-95-3	µg/kg	6.5	<6.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.5	<6.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.5	<6.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.5	<6.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.5	<6.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.5	<6.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.5	<6.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.5	<6.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.5	<6.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.5	<6.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.5	<6.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.5	<6.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.5	<6.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.5	<6.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.5	<6.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.5	<6.5	U
36	Ethylbenzene	100-41-4	µg/kg	6.5	<6.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.5	<6.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.5	<6.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.5	<6.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.5	<6.5	U
41	Naphthalene	91-20-3	µg/kg	6.5	<6.5	U
42	n-Propylbenzene	103-65-1	µg/kg	6.5	<6.5	U
43	Styrene	100-42-5	µg/kg	6.5	<6.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.5	<6.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.5	<6.5	U
46	Tetrachloroethene	127-18-4	µg/kg	6.5	<6.5	U
47	Toluene	108-88-3	µg/kg	6.5	<6.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.5	<6.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.5	<6.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.5	<6.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.5	<6.5	U
52	Trichloroethene	79-01-6	µg/kg	6.5	<6.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.5	<6.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.5	<6.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.5	<6.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.5	<6.5	U
57	Vinyl chloride	75-01-4	µg/kg	6.5	<6.5	U
58	o-Xylene	95-47-6	µg/kg	6.5	<6.5	U
59	m/p-Xylene	108-38-3	µg/kg	6.5	<6.5	U
60	Xylenes (total)	1330-20-7	µg/kg	6.5	<6.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	86
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	108
4	Toluene-d8	2037-26-5	80-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	76
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
3	Fluorobenzene	462-06-6	50-200	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-17	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-W-8.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1760	Prep. No:	-	Anal. Time:	03:17
Data File Name:	2065-17	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	R
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	UJ
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	112
2	Dibromofluoromethane	1868-53-7	79-120	95
3	1,2-Dichloroethane-d4	17060-07-0	81-119	94
4	Toluene-d8	2037-26-5	81-118	112
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	85
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-AD4a-S-2
99SY-AD4a-W-10.8**
99SY-HI8a-S-1
99SY-HI8a-S-1RE
99SY-HI8a-W-11.4
99SY-HI8b-S-1
99SY-HI8b-W-10.1
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-US2a-S-7.5
99SY-US2a-W-9.6
99SY-US4a-S-8
99SY-US4a-W-11.3
99SY-US4b-S-6
99SY-US4b-W-8.1
99SY-HI8d-W-11.4MS
99SY-HI8d-W-11.4MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 9 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/2/99	2,4-Dinitrophenol 4-Nitroaniline	38.4 41.6	99SY-HI8d-W-11.4	J J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-HI8d-W-11.4MS/MSD (All water samples in SDG 99-2065)	4-Nitrophenol Pentachlorophenol	11 (20-138) 15 (24-115)	14 (20-138) 15 (24-115)	- -	J J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-HI8a-S-1	Perylene-d12	141555 (179455-717822)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-HI8a-S-1RE	Perylene-d12	97393 (179455-717822)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
99SY-HI8a-S-1RE	All TCL compounds	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-HI8a-W-11.4 and 99SY-HI8d-W-11.4, samples 99SY-HI8a-S-1 and 99SY-

HI8d-S-1, and samples 99SY-HI8a-S-1RE and 99SY-HI8d-S-1were identified as field duplicates. No semivolatiles were detected in any of the samples.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2065

SDG	Sample	Compound	Flag	A or P	Reason
99-2065	99SY-HI8d-W-11.4	2,4-Dinitrophenol 4-Nitroaniline	J J	A	Continuing calibration (%D)
99-2065	99SY-AD4a-W-10.8** 99SY-HI8a-W-11.4 99SY-HI8b-W-10.1 99SY-HI8c-W-11.4 99SY-HI8d-W-11.4 99SY-US2a-W-9.6 99SY-US4a-W-11.3 99SY-US4b-W-8.1	4-Nitrophenol Pentachlorophenol	J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2065	99SY-HI8a-S-1 99SY-HI8a-S-1RE	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A	Internal standards (area)
99-2065	99SY-HI8a-S-1RE	All TCL compounds	R	A	Overall assessment of data

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-1	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-S-2**	Sample Matrix	Soil	Moisture %:	13.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	20:38
Data File Name:	2065-01	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	580	< 580	U
2	Acenaphthylene	208-96-8	µg/kg	580	< 580	U
3	Anthracene	120-12-7	µg/kg	580	< 580	U
4	Benz(a)anthracene	56-55-3	µg/kg	580	< 580	U
5	Benzo(a)pyrene	50-32-8	µg/kg	580	< 580	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	580	< 580	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	580	< 580	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	580	< 580	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	580	< 580	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	580	< 580	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	580	< 580	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	580	< 580	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	580	< 580	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	580	< 580	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	580	< 580	U
18	2-Chlorophenol	95-57-8	µg/kg	580	< 580	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	580	< 580	U
20	Chrysene	218-01-9	µg/kg	580	< 580	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	580	< 580	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	580	< 580	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	580	< 580	U
24	Dibenzofuran	132-64-9	µg/kg	580	< 580	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	580	< 580	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	580	< 580	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	580	< 580	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	580	< 580	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	580	< 580	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	580	< 580	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	580	< 580	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	580	< 580	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	580	< 580	U
37	Fluoranthene	206-44-0	µg/kg	580	< 580	U
38	Fluorene	86-73-7	µg/kg	580	< 580	U
39	Hexachlorobenzene	118-74-1	µg/kg	580	< 580	U
40	Hexachlorobutadiene	87-68-3	µg/kg	580	< 580	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	580	< 580	U
42	Hexachloroethane	67-72-1	µg/kg	580	< 580	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	580	< 580	U
44	Isophorone	78-59-1	µg/kg	580	< 580	U
45	2-Methylnaphthalene	91-57-6	µg/kg	580	< 580	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	580	< 580	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	580	< 580	U
48	Naphthalene	91-20-3	µg/kg	580	< 580	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	580	< 580	U
53	2-Nitrophenol	88-75-5	µg/kg	580	< 580	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	580	< 580	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	580	< 580	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	580	< 580	U
59	Phenol	108-95-2	µg/kg	580	< 580	U
60	Pyrene	129-00-0	µg/kg	580	< 580	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	580	< 580	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	580	< 580	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	580	< 580	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	69
2	2-Fluorophenol	367-12-4	25-103	71
3	Nitrobenzene-d5	4165-60-0	23-119	72
4	Phenol-d5	4165-62-2	24-112	66
5	Terphenyl-d14	1718-51-0	18-136	101
6	2,4,6-Tribromophenol	118-79-6	20-119	52
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	105
2	Chrysene-d12	1719-03-5	50-200	76
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	112
4	Naphthalene-d8	1146-65-2	50-200	116
5	Perylene-d12	1520-96-3	50-200	83
6	Phenanthrene-d10	1517-22-2	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-2	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-W-10.8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	02:52
Data File Name:	2065-02	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	66
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	72
4	Phenol-d5	4165-62-2	10- 93	31
5	Terphenyl-d14	1718-51-0	33-140	102
6	2,4,6-Tribromophenol	118-79-6	10-122	56
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	101
2	Chrysene-d12	1719-03-5	50-200	75
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	114
5	Perylene-d12	1520-96-3	50-200	83
6	Phenanthrene-d10	1517-22-2	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-4	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-S-1	Sample Matrix	Soil	Moisture %:	7.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	19:07
Data File Name:	2065-04	Sample Amount:	30.0 g	Dilution Factor:	4
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2200	< 2200	U
2	Acenaphthylene	208-96-8	µg/kg	2200	< 2200	U
3	Anthracene	120-12-7	µg/kg	2200	< 2200	U
4	Benz(a)anthracene	56-55-3	µg/kg	2200	< 2200	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2200	< 2200	U UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2200	< 2200	U UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2200	< 2200	U UJ
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2200	< 2200	U UJ
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2200	< 2200	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2200	< 2200	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2200	< 2200	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2200	< 2200	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2200	< 2200	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2200	< 2200	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4300	< 4300	U
16	4-Chloroaniline	106-47-8	µg/kg	4300	< 4300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2200	< 2200	U
18	2-Chlorophenol	95-57-8	µg/kg	2200	< 2200	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2200	< 2200	U
20	Chrysene	218-01-9	µg/kg	2200	< 2200	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2200	< 2200	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2200	< 2200	U UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2200	< 2200	U UJ
24	Dibenzofuran	132-64-9	µg/kg	2200	< 2200	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2200	< 2200	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2200	< 2200	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2200	< 2200	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4300	< 4300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2200	< 2200	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2200	< 2200	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2200	< 2200	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2200	< 2200	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	11000	< 11000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	11000	< 11000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2200	< 2200	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2200	< 2200	U
37	Fluoranthene	206-44-0	µg/kg	2200	< 2200	U
38	Fluorene	86-73-7	µg/kg	2200	< 2200	U
39	Hexachlorobenzene	118-74-1	µg/kg	2200	< 2200	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2200	< 2200	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2200	< 2200	U
42	Hexachloroethane	67-72-1	µg/kg	2200	< 2200	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2200	< 2200	~~U~~ UJ
44	Isophorone	78-59-1	µg/kg	2200	< 2200	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2200	< 2200	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2200	< 2200	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2200	< 2200	U
48	Naphthalene	91-20-3	µg/kg	2200	< 2200	U
49	2-Nitroaniline	88-74-4	µg/kg	11000	< 11000	U
50	3-Nitroaniline	99-09-2	µg/kg	11000	< 11000	U
51	4-Nitroaniline	100-01-6	µg/kg	11000	< 11000	U
52	Nitrobenzene	98-95-3	µg/kg	2200	< 2200	U
53	2-Nitrophenol	88-75-5	µg/kg	2200	< 2200	U
54	4-Nitrophenol	100-02-7	µg/kg	11000	< 11000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2200	< 2200	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2200	< 2200	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	11000	< 11000	U
58	Phenanthrene	85-01-8	µg/kg	2200	< 2200	U
59	Phenol	108-95-2	µg/kg	2200	< 2200	U
60	Pyrene	129-00-0	µg/kg	2200	< 2200	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2200	< 2200	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2200	< 2200	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2200	< 2200	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	51
2	2-Fluorophenol	367-12-4	25-103	47
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	24-112	49
5	Terphenyl-d14	1718-51-0	18-136	87
6	2,4,6-Tribromophenol	118-79-6	20-119	43
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	126
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	116
4	Naphthalene-d8	1146-65-2	50-200	121
5	Perylene-d12	1520-96-3	50-200	39
6	Phenanthrene-d10	1517-22-2	50-200	131
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-4RE	Received Date:	02/25/1999
Sample ID:	**99SY-MI8A-S-1RE**	Sample Matrix	Soil	Moisture %:	7.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	21:12
Data File Name:	2065-04A	Sample Amount:	30 g	Dilution Factor:	4
Extract Vol.	1 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2200	< 2200	U R
2	Acenaphthylene	208-96-8	µg/kg	2200	< 2200	U
3	Anthracene	120-12-7	µg/kg	2200	< 2200	U
4	Benz(a)anthracene	56-55-3	µg/kg	2200	< 2200	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2200	< 2200	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2200	< 2200	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2200	< 2200	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2200	< 2200	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2200	< 2200	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2200	< 2200	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2200	< 2200	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2200	< 2200	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2200	< 2200	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2200	< 2200	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4300	< 4300	U
16	4-Chloroaniline	106-47-8	µg/kg	4300	< 4300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2200	< 2200	U
18	2-Chlorophenol	95-57-8	µg/kg	2200	< 2200	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2200	< 2200	U
20	Chrysene	218-01-9	µg/kg	2200	< 2200	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2200	< 2200	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2200	< 2200	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2200	< 2200	U
24	Dibenzofuran	132-64-9	µg/kg	2200	< 2200	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2200	< 2200	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2200	< 2200	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2200	< 2200	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4300	< 4300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2200	< 2200	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2200	< 2200	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2200	< 2200	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2200	< 2200	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	11000	< 11000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	11000	< 11000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2200	< 2200	U
36	2.6-Dinitrotoluene	606-20-2	µg/kg	2200	< 2200	U
37	Fluoranthene	206-44-0	µg/kg	2200	< 2200	U
38	Fluorene	86-73-7	µg/kg	2200	< 2200	U
39	Hexachlorobenzene	118-74-1	µg/kg	2200	< 2200	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2200	< 2200	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2200	<2200	U
42	Hexachloroethane	67-72-1	µg/kg	2200	<2200	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2200	<2200	U
44	Isophorone	78-59-1	µg/kg	2200	<2200	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2200	<2200	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2200	<2200	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2200	<2200	U
48	Naphthalene	91-20-3	µg/kg	2200	<2200	U
49	2-Nitroaniline	88-74-4	µg/kg	11000	<11000	U
50	3-Nitroaniline	99-09-2	µg/kg	11000	<11000	U
51	4-Nitroaniline	100-01-6	µg/kg	11000	<11000	U
52	Nitrobenzene	98-95-3	µg/kg	2200	<2200	U
53	2-Nitrophenol	88-75-5	µg/kg	2200	<2200	U
54	4-Nitrophenol	100-02-7	µg/kg	11000	<11000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2200	<2200	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2200	<2200	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	11000	<11000	U
58	Phenanthrene	85-01-8	µg/kg	2200	<2200	U
59	Phenol	108-95-2	µg/kg	2200	<2200	U
60	Pyrene	129-00-0	µg/kg	2200	<2200	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2200	<2200	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2200	<2200	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2200	<2200	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	49
2	2-Fluorophenol	367-12-4	25-103	49
3	Nitrobenzene-d5	4165-60-0	23-119	46
4	Phenol-d5	4165-62-2	24-112	49
5	Terphenyl-d14	1718-51-0	18-136	106
6	2,4,6-Tribromophenol	118-79-6	20-119	42
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	118
2	Chrysene-d12	1719-03-5	50-200	64
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
4	Naphthalene-d8	1146-65-2	50-200	111
5	Perylene-d12	1520-96-3	50-200	27
6	Phenanthrene-d10	1517-22-2	50-200	124
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-5	Received Date:	02/25/1999
Sample ID:	**99SY-MI8A-W-11.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	03:34
Data File Name:	2065-05	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	70
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	71
4	Phenol-d5	4165-62-2	10- 93	25
5	Terphenyl-d14	1718-51-0	33-140	104
6	2,4,6-Tribromophenol	118-79-6	10-122	63
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	101
2	Chrysene-d12	1719-03-5	50-200	71
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	131
5	Perylene-d12	1520-96-3	50-200	82
6	Phenanthrene-d10	1517-22-2	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-6	Received Date:	02/25/1999
Sample ID:	99SY-MI8B-S-1	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	15:32
Data File Name:	2065-06	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	<560	U
42	Hexachloroethane	67-72-1	µg/kg	560	<560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	<560	U
44	Isophorone	78-59-1	µg/kg	560	<560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	<560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	<560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	<560	U
48	Naphthalene	91-20-3	µg/kg	560	<560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	<2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	<2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	<2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	<560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	<560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	<2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	<560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	<560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	<2800	U
58	Phenanthrene	85-01-8	µg/kg	560	<560	U
59	Phenol	108-95-2	µg/kg	560	<560	U
60	Pyrene	129-00-0	µg/kg	560	<560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	<560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	<560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	<560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	64
2	2-Fluorophenol	367-12-4	25-103	61
3	Nitrobenzene-d5	4165-60-0	23-119	63
4	Phenol-d5	4165-62-2	24-112	57
5	Terphenyl-d14	1718-51-0	18-136	88
6	2,4,6-Tribromophenol	118-79-6	20-119	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	99
2	Chrysene-d12	1719-03-5	50-200	75
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	122
4	Naphthalene-d8	1146-65-2	50-200	114
5	Perylene-d12	1520-96-3	50-200	76
6	Phenanthrene-d10	1517-22-2	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-7	Received Date:	02/25/1999
Sample ID:	**99SY-MI8B-W-10.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	04:15
Data File Name:	2065-07	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	64
2	2-Fluorophenol	367-12-4	21- 99	43
3	Nitrobenzene-d5	4165-60-0	35-113	65
4	Phenol-d5	4165-62-2	10- 93	23
5	Terphenyl-d14	1718-51-0	33-140	102
6	2,4,6-Tribromophenol	118-79-6	10-122	54
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	106
2	Chrysene-d12	1719-03-5	50-200	77
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	108
4	Naphthalene-d8	1146-65-2	50-200	119
5	Perylene-d12	1520-96-3	50-200	92
6	Phenanthrene-d10	1517-22-2	50-200	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-8	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-S-1	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	16:15
Data File Name:	2065-08	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	60
4	Phenol-d5	4165-62-2	24-112	53
5	Terphenyl-d14	1718-51-0	18-136	84
6	2,4,6-Tribromophenol	118-79-6	20-119	52
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	112
2	Chrysene-d12	1719-03-5	50-200	86
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	119
4	Naphthalene-d8	1146-65-2	50-200	119
5	Perylene-d12	1520-96-3	50-200	70
6	Phenanthrene-d10	1517-22-2	50-200	113
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-9	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	04:56
Data File Name:	2065-09	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	[redacted]	
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	66
2	2-Fluorophenol	367-12-4	21- 99	43
3	Nitrobenzene-d5	4165-60-0	35-113	66
4	Phenol-d5	4165-62-2	10- 93	24
5	Terphenyl-d14	1718-51-0	33-140	97
6	2,4,6-Tribromophenol	118-79-6	10-122	61
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	88
2	Chrysene-d12	1719-03-5	50-200	63
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
4	Naphthalene-d8	1146-65-2	50-200	116
5	Perylene-d12	1520-96-3	50-200	74
6	Phenanthrene-d10	1517-22-2	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-10	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-S-1	Sample Matrix	Soil	Moisture %:	11.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	21:20
Data File Name:	2065-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	570	< 570	U
2	Acenaphthylene	208-96-8	µg/kg	570	< 570	U
3	Anthracene	120-12-7	µg/kg	570	< 570	U
4	Benz(a)anthracene	56-55-3	µg/kg	570	< 570	U
5	Benzo(a)pyrene	50-32-8	µg/kg	570	< 570	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	570	< 570	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	570	< 570	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	570	< 570	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	570	< 570	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	570	< 570	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	570	< 570	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	570	< 570	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	570	< 570	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	570	< 570	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	570	< 570	U
18	2-Chlorophenol	95-57-8	µg/kg	570	< 570	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	570	< 570	U
20	Chrysene	218-01-9	µg/kg	570	< 570	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	570	< 570	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	570	< 570	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	570	< 570	U
24	Dibenzofuran	132-64-9	µg/kg	570	< 570	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	570	< 570	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	570	< 570	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	570	< 570	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	570	< 570	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	570	< 570	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	570	< 570	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	570	< 570	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	570	< 570	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	570	< 570	U
37	Fluoranthene	206-44-0	µg/kg	570	< 570	U
38	Fluorene	86-73-7	µg/kg	570	< 570	U
39	Hexachlorobenzene	118-74-1	µg/kg	570	< 570	U
40	Hexachlorobutadiene	87-68-3	µg/kg	570	< 570	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	570	< 570	U
42	Hexachloroethane	67-72-1	µg/kg	570	< 570	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	< 570	U
44	Isophorone	78-59-1	µg/kg	570	< 570	U
45	2-Methylnaphthalene	91-57-6	µg/kg	570	< 570	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	570	< 570	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	570	< 570	U
48	Naphthalene	91-20-3	µg/kg	570	< 570	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	570	< 570	U
53	2-Nitrophenol	88-75-5	µg/kg	570	< 570	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	570	< 570	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	570	< 570	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	570	< 570	U
59	Phenol	108-95-2	µg/kg	570	< 570	U
60	Pyrene	129-00-0	µg/kg	570	< 570	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	570	< 570	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	570	< 570	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	570	< 570	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	79
2	2-Fluorophenol	367-12-4	25-103	75
3	Nitrobenzene-d5	4165-60-0	23-119	78
4	Phenol-d5	4165-62-2	24-112	70
5	Terphenyl-d14	1718-51-0	18-136	98
6	2,4,6-Tribromophenol	118-79-6	20-119	53
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	85
2	Chrysene-d12	1719-03-5	50-200	67
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	96
5	Perylene-d12	1520-96-3	50-200	73
6	Phenanthrene-d10	1517-22-2	50-200	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-11	Received Date:	02/25/1999
Sample ID:	**99SY-MI8D-W-11.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	14:23
Data File Name:	2065-11A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U/UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	~~U~~ UJ
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	80
2	2-Fluorophenol	367-12-4	21- 99	25
3	Nitrobenzene-d5	4165-60-0	35-113	91
4	Phenol-d5	4165-62-2	10- 93	20
5	Terphenyl-d14	1718-51-0	33-140	112
6	2,4,6-Tribromophenol	118-79-6	10-122	65
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	78
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
4	Naphthalene-d8	1146-65-2	50-200	85
5	Perylene-d12	1520-96-3	50-200	91
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-12	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-S-7.5**	Sample Matrix	Soil	Moisture %:	18.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	14:48
Data File Name:	2065-12	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	610	<610	U
2	Acenaphthylene	208-96-8	µg/kg	610	<610	U
3	Anthracene	120-12-7	µg/kg	610	<610	U
4	Benz(a)anthracene	56-55-3	µg/kg	610	<610	U
5	Benzo(a)pyrene	50-32-8	µg/kg	610	<610	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	610	<610	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	610	<610	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	610	<610	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	610	<610	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	610	<610	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	610	<610	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	610	<610	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	610	<610	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	610	<610	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	<1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	<1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	610	<610	U
18	2-Chlorophenol	95-57-8	µg/kg	610	<610	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	610	<610	U
20	Chrysene	218-01-9	µg/kg	610	<610	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	610	<610	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	610	<610	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	610	<610	U
24	Dibenzofuran	132-64-9	µg/kg	610	<610	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	610	<610	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	610	<610	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	610	<610	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	<1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	610	<610	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	610	<610	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	610	<610	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	610	<610	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3100	<3100	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3100	<3100	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	610	<610	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	610	<610	U
37	Fluoranthene	206-44-0	µg/kg	610	<610	U
38	Fluorene	86-73-7	µg/kg	610	<610	U
39	Hexachlorobenzene	118-74-1	µg/kg	610	<610	U
40	Hexachlorobutadiene	87-68-3	µg/kg	610	<610	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	610	<610	U
42	Hexachloroethane	67-72-1	µg/kg	610	<610	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	610	<610	U
44	Isophorone	78-59-1	µg/kg	610	<610	U
45	2-Methylnaphthalene	91-57-6	µg/kg	610	<610	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	610	<610	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	610	<610	U
48	Naphthalene	91-20-3	µg/kg	610	<610	U
49	2-Nitroaniline	88-74-4	µg/kg	3100	<3100	U
50	3-Nitroaniline	99-09-2	µg/kg	3100	<3100	U
51	4-Nitroaniline	100-01-6	µg/kg	3100	<3100	U
52	Nitrobenzene	98-95-3	µg/kg	610	<610	U
53	2-Nitrophenol	88-75-5	µg/kg	610	<610	U
54	4-Nitrophenol	100-02-7	µg/kg	3100	<3100	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	610	<610	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	610	<610	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3100	<3100	U
58	Phenanthrene	85-01-8	µg/kg	610	<610	U
59	Phenol	108-95-2	µg/kg	610	<610	U
60	Pyrene	129-00-0	µg/kg	610	<610	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	610	<610	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	610	<610	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	610	<610	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	64
2	2-Fluorophenol	367-12-4	25-103	62
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	61
5	Terphenyl-d14	1718-51-0	18-136	91
6	2,4,6-Tribromophenol	118-79-6	20-119	48
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	129
2	Chrysene-d12	1719-03-5	50-200	97
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	126
4	Naphthalene-d8	1146-65-2	50-200	133
5	Perylene-d12	1520-96-3	50-200	98
6	Phenanthrene-d10	1517-22-2	50-200	129
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-13	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	06:19
Data File Name:	2065-13	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	61
2	2-Fluorophenol	367-12-4	21- 99	45
3	Nitrobenzene-d5	4165-60-0	35-113	65
4	Phenol-d5	4165-62-2	10- 93	30
5	Terphenyl-d14	1718-51-0	33-140	105
6	2,4,6-Tribromophenol	118-79-6	10-122	56
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	188
2	Chrysene-d12	1719-03-5	50-200	140
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	163
4	Naphthalene-d8	1146-65-2	50-200	188
5	Perylene-d12	1520-96-3	50-200	161
6	Phenanthrene-d10	1517-22-2	50-200	192
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-14	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-S-8**	Sample Matrix	Soil	Moisture %:	22.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/26/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	22:02
Data File Name:	2065-14	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	650	<650	U
2	Acenaphthylene	208-96-8	µg/kg	650	<650	U
3	Anthracene	120-12-7	µg/kg	650	<650	U
4	Benz(a)anthracene	56-55-3	µg/kg	650	<650	U
5	Benzo(a)pyrene	50-32-8	µg/kg	650	<650	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	650	<650	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	650	<650	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	650	<650	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	650	<650	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	650	<650	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	650	<650	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	650	<650	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	650	<650	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	650	<650	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1300	<1300	U
16	4-Chloroaniline	106-47-8	µg/kg	1300	<1300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	650	<650	U
18	2-Chlorophenol	95-57-8	µg/kg	650	<650	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	650	<650	U
20	Chrysene	218-01-9	µg/kg	650	<650	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	650	<650	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	650	<650	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	650	<650	U
24	Dibenzofuran	132-64-9	µg/kg	650	<650	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	650	<650	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	650	<650	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	650	<650	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1300	<1300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	650	<650	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	650	<650	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	650	<650	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	650	<650	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3200	<3200	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3200	<3200	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	650	<650	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	650	<650	U
37	Fluoranthene	206-44-0	µg/kg	650	<650	U
38	Fluorene	86-73-7	µg/kg	650	<650	U
39	Hexachlorobenzene	118-74-1	µg/kg	650	<650	U
40	Hexachlorobutadiene	87-68-3	µg/kg	650	<650	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	650	<650	U
42	Hexachloroethane	67-72-1	µg/kg	650	<650	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	650	<650	U
44	Isophorone	78-59-1	µg/kg	650	<650	U
45	2-Methylnaphthalene	91-57-6	µg/kg	650	<650	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	650	<650	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	650	<650	U
48	Naphthalene	91-20-3	µg/kg	650	<650	U
49	2-Nitroaniline	88-74-4	µg/kg	3200	<3200	U
50	3-Nitroaniline	99-09-2	µg/kg	3200	<3200	U
51	4-Nitroaniline	100-01-6	µg/kg	3200	<3200	U
52	Nitrobenzene	98-95-3	µg/kg	650	<650	U
53	2-Nitrophenol	88-75-5	µg/kg	650	<650	U
54	4-Nitrophenol	100-02-7	µg/kg	3200	<3200	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	650	<650	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	650	<650	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3200	<3200	U
58	Phenanthrene	85-01-8	µg/kg	650	<650	U
59	Phenol	108-95-2	µg/kg	650	<650	U
60	Pyrene	129-00-0	µg/kg	650	<650	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	650	<650	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	650	<650	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	650	<650	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	70
2	2-Fluorophenol	367-12-4	25-103	71
3	Nitrobenzene-d5	4165-60-0	23-119	73
4	Phenol-d5	4165-62-2	24-112	66
5	Terphenyl-d14	1718-51-0	18-136	95
6	2,4,6-Tribromophenol	118-79-6	20-119	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	92
2	Chrysene-d12	1719-03-5	50-200	72
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
4	Naphthalene-d8	1146-65-2	50-200	100
5	Perylene-d12	1520-96-3	50-200	78
6	Phenanthrene-d10	1517-22-2	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-15	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-W-11.3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	07:00
Data File Name:	2065-15	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	<10	U
42	Hexachloroethane	67-72-1	µg/L	10	<10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	<10	U
44	Isophorone	78-59-1	µg/L	10	<10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	<10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	<10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	<10	U
48	Naphthalene	91-20-3	µg/L	10	<10	U
49	2-Nitroaniline	88-74-4	µg/L	50	<50	U
50	3-Nitroaniline	99-09-2	µg/L	50	<50	U
51	4-Nitroaniline	100-01-6	µg/L	50	<50	U
52	Nitrobenzene	98-95-3	µg/L	10	<10	U
53	2-Nitrophenol	88-75-5	µg/L	10	<10	U
54	4-Nitrophenol	100-02-7	µg/L	50	<50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	<10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	<10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	<50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	<10	U
59	Phenol	108-95-2	µg/L	10	<10	U
60	Pyrene	129-00-0	µg/L	10	<10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	<10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	<10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	62
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	65
4	Phenol-d5	4165-62-2	10- 93	31
5	Terphenyl-d14	1718-51-0	33-140	100
6	2,4,6-Tribromophenol	118-79-6	10-122	54
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	119
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	114
4	Naphthalene-d8	1146-65-2	50-200	126
5	Perylene-d12	1520-96-3	50-200	97
6	Phenanthrene-d10	1517-22-2	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-16	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-S-6**	Sample Matrix	Soil	Moisture %:	22.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	02/26/99	Anal. Date:	02/28/99
Batch No:	99G1682	Prep. No:	1 of 1	Anal. Time:	16:57
Data File Name:	2065-16	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	650	<650	U
2	Acenaphthylene	208-96-8	µg/kg	650	<650	U
3	Anthracene	120-12-7	µg/kg	650	<650	U
4	Benz(a)anthracene	56-55-3	µg/kg	650	<650	U
5	Benzo(a)pyrene	50-32-8	µg/kg	650	<650	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	650	<650	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	650	<650	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	650	<650	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	650	<650	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	650	<650	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	650	<650	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	650	<650	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	650	<650	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	650	<650	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1300	<1300	U
16	4-Chloroaniline	106-47-8	µg/kg	1300	<1300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	650	<650	U
18	2-Chlorophenol	95-57-8	µg/kg	650	<650	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	650	<650	U
20	Chrysene	218-01-9	µg/kg	650	<650	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	650	<650	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	650	<650	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	650	<650	U
24	Dibenzofuran	132-64-9	µg/kg	650	<650	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	650	<650	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	650	<650	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	650	<650	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1300	<1300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	650	<650	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	650	<650	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	650	<650	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	650	<650	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3200	<3200	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3200	<3200	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	650	<650	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	650	<650	U
37	Fluoranthene	206-44-0	µg/kg	650	<650	U
38	Fluorene	86-73-7	µg/kg	650	<650	U
39	Hexachlorobenzene	118-74-1	µg/kg	650	<650	U
40	Hexachlorobutadiene	87-68-3	µg/kg	650	<650	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	650	<650	U
42	Hexachloroethane	67-72-1	µg/kg	650	<650	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	650	<650	U
44	Isophorone	78-59-1	µg/kg	650	<650	U
45	2-Methylnaphthalene	91-57-6	µg/kg	650	<650	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	650	<650	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	650	<650	U
48	Naphthalene	91-20-3	µg/kg	650	<650	U
49	2-Nitroaniline	88-74-4	µg/kg	3200	<3200	U
50	3-Nitroaniline	99-09-2	µg/kg	3200	<3200	U
51	4-Nitroaniline	100-01-6	µg/kg	3200	<3200	U
52	Nitrobenzene	98-95-3	µg/kg	650	<650	U
53	2-Nitrophenol	88-75-5	µg/kg	650	<650	U
54	4-Nitrophenol	100-02-7	µg/kg	3200	<3200	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	650	<650	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	650	<650	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3200	<3200	U
58	Phenanthrene	85-01-8	µg/kg	650	<650	U
59	Phenol	108-95-2	µg/kg	650	<650	U
60	Pyrene	129-00-0	µg/kg	650	<650	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	650	<650	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	650	<650	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	650	<650	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	51
2	2-Fluorophenol	367-12-4	25-103	53
3	Nitrobenzene-d5	4165-60-0	23-119	52
4	Phenol-d5	4165-62-2	24-112	53
5	Terphenyl-d14	1718-51-0	18-136	96
6	2,4,6-Tribromophenol	118-79-6	20-119	49
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	130
2	Chrysene-d12	1719-03-5	50-200	96
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	129
5	Perylene-d12	1520-96-3	50-200	65
6	Phenanthrene-d10	1517-22-2	50-200	134
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-17	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-W-8.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1721	Prep. No:	1 of 1	Anal. Time:	07:40
Data File Name:	2065-17	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	~~U~~ UJ
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	63
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	64
4	Phenol-d5	4165-62-2	10- 93	31
5	Terphenyl-d14	1718-51-0	33-140	92
6	2,4,6-Tribromophenol	118-79-6	10-122	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	110
2	Chrysene-d12	1719-03-5	50-200	77
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	92
6	Phenanthrene-d10	1517-22-2	50-200	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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11/16/99

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-HI8a-S-1**
99SY-HI8a-W-11.4
99SY-HI8b-S-1
99SY-HI8b-W-10.1
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-HI8d-W-11.4MS
99SY-HI8d-W-11.4MSD

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 4 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 99SY-HI8a-S-1** and 99SY-HI8d-S-1 and samples 99SY-HI8a-W-11.4 and 99SY-HI8d-W-11.4 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-HI8a-S-1**	99SY-HI8d-S-1			
PCB-1260	14	28U	200 (≤35)	J	A

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2065

SDG	Sample	Compound	Flag	A or P	Reason
99-2065	99SY-HI8a-S-1** 99SY-HI8d-S-1	PCB-1260	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-4	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-S-1	Sample Matrix	Soil	Moisture %:	7.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	22:09
Data File Name:	2065.004	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	<54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	<54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	<54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	<54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	14	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	79
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-5	Received Date:	02/25/1999
Sample ID:	**99SY-MI8A-W-11.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	16:00
Data File Name:	2065.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	76
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-6	Received Date:	02/25/1999
Sample ID:	99SY-MI8B-S-1	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	22:34
Data File Name:	2065.006	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	<56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	<56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	<56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	<56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	<28	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	78
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-7	Received Date:	02/25/1999
Sample ID:	**99SY-MI8B-W-10.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	16:25
Data File Name:	2065.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-8	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-S-1	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	22:58
Data File Name:	2065.008	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	52	< 52	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	100	< 100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	52	< 52	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	52	< 52	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	52	< 52	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	< 26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	< 26	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-9	Received Date:	02/25/1999
Sample ID:	**99SY-MI8C-W-11.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	16:49
Data File Name:	2065.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	91
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-10	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-S-1	Sample Matrix	Soil	Moisture %:	11.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1681	Prep. No:	1 of 1	Anal. Time:	23:23
Data File Name:	2065.010	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	57	<57	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	57	<57	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	57	<57	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	57	<57	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	<28	U UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	75
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w/1999

4639

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-11	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	17:14
Data File Name:	2065.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

4642

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-HI8a-S-1
99SY-HI8a-W-11.4**
99SY-HI8b-S-1
99SY-HI8b-W-10.1
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-HI8d-S-1MS
99SY-HI8d-S-1MSD
99SY-HI8d-W-11.4MS
99SY-HI8d-W-11.4MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 6 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1690GL01 (All water samples in SDG 99-2065)	TPH as extractables	131 (57-126)	-	-	J (all detects)	A

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-HI8a-W-11.4** and 99SY-HI8d-W-11.4 and samples 99SY-HI8a-S-1 and 99SY-HI8d-S-1 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	99SY-HI8a-W-11.4**	99SY-HI8d-W-11.4			
TPH as diesel	0.2	0.2	0 (≤20)	-	-

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI8a-S-1	99SY-HI8d-S-1			
TPH as diesel	5	11U	200 (≤35)	J	A

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI8a-S-1	99SY-HI8d-S-1			
TPH as motor oil	63	11U	200 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2065

SDG	Sample	Compound	Flag	A or P	Reason
99-2065	99SY-HI8a-W-11.4** 99SY-HI8b-W-10.1 99SY-HI8c-W-11.4 99SY-HI8d-W-11.4	TPH as extractables	J (all detects)	A	Laboratory control samples (%R)
99-2065	99SY-HI8a-S-1 99SY-HI8d-S-1	TPH as diesel TPH as motor oil	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-4	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-S-1	Sample Matrix	Soil	Moisture %:	7.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/01/99
Batch No:	99G1683	Prep. No:	1 of 1	Anal. Time:	19:50
Data File Name:	2065.004	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	[redacted]	J
2	Motor oil		mg/kg	11	[redacted]	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	110
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-5	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	13:02
Data File Name:	2065.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	120
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M1699

4832

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-6	Received Date:	02/25/1999
Sample ID:	**99SY-MI8B-S-1**	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/01/99
Batch No:	99G1683	Prep. No:	1 of 1	Anal. Time:	21:07
Data File Name:	2065.006	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	17	
2	Motor oil		mg/kg	11	140	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-149	115	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4834

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-7	Received Date:	02/25/1999
Sample ID:	99SY-MW8B-W-10.1	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	13:29
Data File Name:	2065.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.1	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4836

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-8	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-S-1	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/01/99
Batch No:	99G1683	Prep. No:	1 of 1	Anal. Time:	21:32
Data File Name:	2065.008	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	5	J
2	Motor oil		mg/kg	10	80	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	78.
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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4838

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-9	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	13:55
Data File Name:	2065.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.09	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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4840

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-10	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-S-1	Sample Matrix	Soil	Moisture %:	11.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	03/01/99
Batch No:	99G1683	Prep. No:	1 of 1	Anal. Time:	21:57
Data File Name:	2065.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U UJ
2	Motor oil		mg/kg	11	<11	U UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

UU699

4842

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-11	Received Date:	02/25/1999
Sample ID:	**99SY-MI8D-W-11.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	02/26/99	Anal. Date:	02/27/99
Batch No:	99G1690	Prep. No:	1 of 1	Anal. Time:	14:22
Data File Name:	2065.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w1169

4844

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 7, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-AD4a-S-2
99SY-AD4a-W-10.8**
99SY-HI8a-S-1
99SY-HI8a-W-11.4
99SY-HI8b-S-1
99SY-HI8b-W-10.1
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-US2a-S-7.5
99SY-US2a-W-9.6
99SY-US4a-S-8
99SY-US4a-W-11.3
99SY-US4b-S-6
99SY-US4b-W-8.1
99SY-HI8d-S-1MS
99SY-HI8d-S-1MSD
99SY-HI8d-S-1DUP
99SY-HI8d-W-11.4MS
99SY-HI8d-W-11.4MSD
99SY-HI8d-W-11.4DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium	0.036 mg/Kg	All soil samples in SDG 99-2065
ICB/CCB	Antimony Cobalt Lead Selenium Molybdenum	1.9 ug/L 0.3 ug/L 1.0 ug/L 4.9 ug/L 0.7 ug/L	All soil samples in SDG 99-2065
PB (prep blank)	Antimony	1.7 ug/L	All water samples in SDG 99-2065
ICB/CCB	Antimony Lead Selenium Thallium	2.9 ug/L 1.9 ug/L 4.9 ug/L 1.9 ug/L	All water samples in SDG 99-2065

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-AD4a-S-2	Antimony Molybdenum	0.15 mg/Kg 0.039 mg/Kg	0.15U mg/Kg 0.039U mg/Kg

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI8c-S-1	Antimony	0.12 mg/Kg	0.12U mg/Kg
99SY-HI8d-S-1	Antimony	0.096 mg/Kg	0.096U mg/Kg
99SY-AD4a-W-10.8**	Antimony Lead	11.7 ug/L 2.7 ug/L	11.7U ug/L 2.7U ug/L
99SY-HI8a-W-11.4	Antimony Lead	3.5 ug/L 0.99 ug/L	3.5U ug/L 0.99U ug/L
99SY-HI8b-W-10.1	Antimony Lead	5.7 ug/L 1.4 ug/L	5.7U ug/L 1.4U ug/L
99SY-HI8c-W-11.4	Antimony	7.6 ug/L	7.6U ug/L
99SY-US2a-W-9.6	Antimony Lead Selenium	11.1 ug/L 2.2 ug/L 4.8 ug/L	11.1U ug/L 2.2U ug/L 4.8U ug/L
99SY-US4a-W-11.3	Antimony Lead Selenium	11.2 ug/L 2.5 ug/L 3.0 ug/L	11.2U ug/L 2.5U ug/L 3.0U ug/L
99SY-US4b-W-8.1	Antimony Lead Selenium	12.0 ug/L 4.5 ug/L 6.2 ug/L	12.0U ug/L 4.5U ug/L 6.2U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-HI8d-S-1MS/MSD (All soil samples in SDG 99-2065)	Selenium	65 (75-125)	65 (75-125)	-	J	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 99SY-HI8a-S-1 and 99SY-HI8d-S-1 and samples 99SY-HI8a-W-11.4 and 99SY-HI8d-W-11.4 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI8a-S-1	99SY-HI8d-S-1			
Antimony	1.3	0.096	172 (≤35)	J	A
Arsenic	2.1	2.4	13 (≤35)	-	-
Barium	118	112	5 (≤35)	-	-
Chromium	61.6	14.3	125 (≤35)	J	A
Cobalt	28.0	10.3	92 (≤35)	J	A
Copper	50.4	14.3	112 (≤35)	J	A
Lead	5.7	3.5	48 (≤35)	J	A
Mercury	0.046	0.048	4 (≤35)	-	-
Nickel	70.9	17.5	121 (≤35)	J	A
Vanadium	75.8	21.8	111 (≤35)	J	A
Zinc	69.5	40.3	53 (≤35)	J	A
Molybdenum	0.49	0.68	32 (≤35)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-HI8a-W-11.4	99SY-HI8d-W-11.4			
Antimony	3.5	15U	200 (≤20)	J	A
Arsenic	45.6	49.5	8 (≤20)	-	-
Barium	73.6	74.4	1 (≤20)	-	-
Chromium	4.3	7.2	50 (≤20)	J	A
Cobalt	0.94	2.9U	200 (≤20)	J	A
Lead	0.99	10.4	165 (≤20)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-HI8a-W-11.4	99SY-HI8d-W-11.4			
Mercury	0.20	0.23	14 (≤20)	-	-
Nickel	5.0	3.6U	200 (≤20)	J	A
Zinc	4.4	9.6U	200 (≤20)	J	A
Molybdenum	6.6	7.5	13 (≤20)	-	-

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2065

SDG	Sample	Analyte	Flag	A or P	Reason
99-2065	99SY-AD4a-S-2 99SY-HI8a-S-1 99SY-HI8b-S-1 99SY-HI8c-S-1 99SY-HI8d-S-1 99SY-US2a-S-7.5 99SY-US4a-S-8 99SY-US4b-S-6	Selenium	J	A	Matrix spike/Matrix spike duplicates (%R)
99-2065	99SY-HI8a-S-1 99SY-HI8d-S-1	Antimony Chromium Cobalt Copper Lead Nickel Vanadium Zinc	J J J J J J J J	A	Field duplicates (RPD)
99-2065	99SY-HI8a-W-11.4 99SY-HI8d-W-11.4	Antimony Chromium Cobalt Lead Nickel Zinc	J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2065

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2065	99SY-AD4a-S-2	Antimony Molybdenum	0.15U mg/Kg 0.039U mg/Kg	A
99-2065	99SY-HI8c-S-1	Antimony	0.12U mg/Kg	A
99-2065	99SY-HI8d-S-1	Antimony	0.096U mg/Kg	A
99-2065	99SY-AD4a-W-10.8**	Antimony Lead	11.7U ug/L 2.7U ug/L	A
99-2065	99SY-HI8a-W-11.4	Antimony Lead	3.5U ug/L 0.99U ug/L	A
99-2065	99SY-HI8b-W-10.1	Antimony Lead	5.7U ug/L 1.4U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2065	99SY-HI8c-W-11.4	Antimony	7.6U ug/L	A
99-2065	99SY-US2a-W-9.6	Antimony Lead Selenium	11.1U ug/L 2.2U ug/L 4.8U ug/L	A
99-2065	99SY-US4a-W-11.3	Antimony Lead Selenium	11.2U ug/L 2.5U ug/L 3.0U ug/L	A
99-2065	99SY-US4b-W-8.1	Antimony Lead Selenium	12.0U ug/L 4.5U ug/L 6.2U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

C

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-1	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-S-2**	Sample Matrix	Soil	Moisture %:	13.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.8	0.15	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.35	2.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	56.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.12	<0.0063	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	<0.0098	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.58	14.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.58	7.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.58	7.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.23	3.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.040	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	0.039	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.35	8.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.58	<0.17	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.58	<0.046	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.8	<0.092	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.58	24.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.58	32.5		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-2	Received Date:	02/25/1999
Sample ID:	**99SY-AD4A-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	11.7		P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	3.5	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	115		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	6.6		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.29	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	2.7	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.23	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	16.7		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.3	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.9	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	0.95	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	22.2		P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOC's
Sample ID: 99SY-MI8A-S-1
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992065
Lab Sample ID: 99-2065-4
Sample Matrix Soil

Collection Date: 02/25/1999
Collected by: BB/DB
Received Date: 02/25/1999
Moisture %: 7.2

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	1.3	B	P	J	99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	118		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.11	<0.0059	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	<0.0092	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	61.6		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	28.0		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	50.4		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.22	5.7		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.046	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.49		P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	70.9		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	<0.16	U	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.043	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.086	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	75.8		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	69.5		P	J	99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-5	Received Date:	02/25/1999
Sample ID:	99SY-MI8A-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	3.5	~~B~~	P	UJ	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	45.6		P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	73.6		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	4.3	~~B~~	P	J	99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.94	~~B~~	P	J	99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	0.99	~~B~~	P	UJ	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.20	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.6		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	5.0		P	J	99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.9	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	4.4	~~B~~	P	J	99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/23/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-6	Received Date:	02/25/1999
Sample ID:	99SY-MI8B-S-1	Sample Matrix	Soil	Moisture %:	10.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	<0.084	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	3.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	95.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.11	<0.0062	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	<0.0095	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	14.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	9.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	12.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.22	6.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.25		CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.025	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	13.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	<0.17	U	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	<0.045	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	<0.089	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	26.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	43.3		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-7	Received Date:	02/25/1999
Sample ID:	99SY-MI8B-W-10.1	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	5.7	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	3.4	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	168		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	< 0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	< 0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	6.0		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.50	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	< 1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	1.4	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.12	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	10		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.6	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	< 2.9	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	< 0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	< 0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	4.7	B	P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/18/99

4952

Applied P & Ch Laboratory

Metal Analysis Results

7

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-8	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-S-1	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	0.12	B	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	3.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	100		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.10	<0.0057	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	<0.0088	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	14.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	9.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	11.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.21	24.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	0.056	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	0.49		P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	10.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	<0.16	U	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	0.043	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	<0.083	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	29.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	62.2		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/14/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-9	Received Date:	02/25/1999
Sample ID:	99SY-MI8C-W-11.4	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	7.6	B	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	12.7		P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	145		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	5.4		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.35	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.95	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.13	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	8.8		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.5	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.9	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	3.7	B	P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-10	Received Date:	02/25/1999
Sample ID:	99SY-MI8D-S-1	Sample Matrix	Soil	Moisture %:	11.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	0.096	~~B~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	2.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	112		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.11	<0.0062	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	<0.0096	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.57	14.3		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.57	10.3		P	↓	99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.57	14.3		P	↓	99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.23	3.5		P	↓	99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.048	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	0.68		P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	17.5		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.57	<0.17	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.57	<0.045	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.7	<0.091	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.57	21.8		P	J	99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.57	40.3		P	J	99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

10

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOC's
Sample ID: 99SY-MI8D-W-11.4
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992065
Lab Sample ID: 99-2065-11
Sample Matrix Water

Collection Date: 02/25/1999
Collected by: BB/DB
Received Date: 02/25/1999
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	100	< 15	U	P	UJ	99M1329L	03/02/99	03/02/99	10	6010C
Arsenic	7440-38-2	µg/L	50	49.5	B	P		99M1329L	03/02/99	03/02/99	10	6010C
Barium	7440-39-3	µg/L	100	74.4	B	P		99M1329L	03/02/99	03/02/99	10	6010C
Beryllium	7440-41-7	µg/L	10	< 1.1	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Cadmium	7440-43-9	µg/L	20	< 1.7	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Chromium	7440-47-3	µg/L	50	7.2	B	P	J	99M1329L	03/02/99	03/02/99	10	6010C
Cobalt	7440-48-4	µg/L	50	< 2.9	U	P	UJ	99M1329L	03/02/99	03/02/99	10	6010C
Copper	7440-50-8	µg/L	100	< 12	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Lead	7439-92-1	µg/L	50	10.4	B	P	J	99M1329L	03/02/99	03/02/99	10	6010C
Mercury	7439-97-6	µg/L	0.5	0.23	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	50	7.5	B	P		99M1329L	03/02/99	03/02/99	10	6010C
Nickel	7440-02-0	µg/L	50	< 3.6	U	P	UJ	99M1329L	03/02/99	03/02/99	10	6010C
Selenium	7782-49-2	µg/L	100	< 29	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Silver	7440-22-4	µg/L	100	< 8.0	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Thallium	7440-28-0	µg/L	100	< 16	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Vanadium	7440-62-2	µg/L	100	< 5.5	U	P		99M1329L	03/02/99	03/02/99	10	6010C
Zinc	7440-66-6	µg/L	50	< 9.6	U	P	UJ	99M1329L	03/02/99	03/02/99	10	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/16/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-12	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-S-7.5**	Sample Matrix	Soil	Moisture %:	18.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.1	< 0.092	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.37	4.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	65.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.12	< 0.0067	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	< 0.010	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.61	13.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.61	7.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.61	9.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.24	3.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	0.046	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	< 0.027	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.37	10.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.61	< 0.18	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.61	< 0.049	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	6.1	< 0.098	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.61	27.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.61	33.6		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4957

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-13	Received Date:	02/25/1999
Sample ID:	**99SY-US2A-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	11.1		P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	3.1	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	263		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	5.6		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.29	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	2.2	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.12	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	15.5		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.1	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	4.8	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	3.5	B	P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-14	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-S-8**	Sample Matrix	Soil	Moisture %:	22.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.5	<0.097	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.39	3.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.3	55.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.13	<0.0071	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.26	<0.011	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.65	13.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.65	6.9		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.65	7.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.26	3.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.26	0.032	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.26	<0.029	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.39	9.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.65	<0.19	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.65	<0.052	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	6.5	<0.10	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.65	21.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.65	34.5		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-15	Received Date:	02/25/1999
Sample ID:	**99SY-US4A-W-11.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	11.2		P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	5.8		P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	206		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	6.3		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.29	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	2.5	B	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	15.7		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.7	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.0	B	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	0.86	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	9.8		P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

15

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-16	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-S-6**	Sample Matrix	Soil	Moisture %:	22.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.5	< 0.097	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.39	3.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.3	62.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.13	< 0.0071	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.26	< 0.011	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.65	12.9		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.65	7.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.65	7.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.26	3.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.26	0.031	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.26	< 0.028	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.39	9.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.65	< 0.19	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.65	< 0.052	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	6.5	< 0.10	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.65	22.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.65	38.4		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

14

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/25/1999
Project ID:	LBNSY AOC's	Service ID:	992065	Collected by:	BB/DB
		Lab Sample ID:	99-2065-17	Received Date:	02/25/1999
Sample ID:	**99SY-US4B-W-8.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	12.0		P	U	99M1329L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	µg/L	5	9.2		P		99M1329L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	µg/L	10	119		P		99M1329L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	µg/L	1	<0.11	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	µg/L	5	6.2		P		99M1329L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.29	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	µg/L	10	<1.2	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	µg/L	5	4.5	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.14	B	CV		99M1322N	03/01/99	03/01/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	14.8		P		99M1329L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.1	B	P		99M1329L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.2	~~B~~	P	U	99M1329L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.6	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1329L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	µg/L	5	8.4		P		99M1329L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/10/99

4962

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 25, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2065

Sample Identification

99SY-AD4a-S-2
99SY-AD4a-W-10.8
99SY-HI8a-S-1
99SY-HI8a-W-11.4
99SY-HI8b-S-1
99SY-HI8b-W-10.1**
99SY-HI8c-S-1
99SY-HI8c-W-11.4
99SY-HI8d-S-1
99SY-HI8d-W-11.4
99SY-US2a-S-7.5
99SY-US4a-S-8
99SY-US4b-S-6
99SY-AD4a-W-10.8DUP
99SY-US2a-S-7.5DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 9 soil samples and 6 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-HI8a-S-1 and 99SY-HI8d-S-1 and samples 99SY-HI8a-W-11.4 and 99SY-HI8d-W-11.4 were identified as field duplicates. The results are listed as follows:

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-HI8a-S-1	99SY-HI8d-S-1			
pH	7.89	8.01	2 (≤35)	-	-

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-HI8a-W-11.4	99SY-HI8d-W-11.4			
pH	5.44	5.02	8 (≤20)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2065

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: LBNSY AOC's Service ID: 992065 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2065-1	99SY-AD4A-S-2	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	8.00	
99-2065-2	99SY-AD4A-W-10.8	Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	7.03	
99-2065-4	99SY-MI8A-S-1	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	7.89	
99-2065-5	99SY-MI8A-W-11.4	Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	5.44	
99-2065-6	99SY-MI8B-S-1	Soil	02/23/99	02/25/99	03/04/99	99W2274	pH unit	0.01	7.89	
99-2065-7	99SY-MI8B-W-10.1	Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	7.20	
99-2065-8	99SY-MI8C-S-1	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	8.59	
99-2065-9	99SY-MI8C-W-11.4	Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	7.24	
99-2065-10	99SY-MI8D-S-1	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	8.01	
99-2065-11	99SY-MI8D-W-11.4	Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	5.02	
99-2065-12	99SY-US2A-S-7.5	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	8.34	
99-2065-14	99SY-US4A-S-8	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	7.72	
99-2065-16	99SY-US4B-S-6	Soil	02/25/99	02/25/99	03/04/99	99W2274	pH unit	0.01	8.49	
99W2274-MB-01		Soil	03/04/99	03/04/99	03/04/99	99W2274	pH unit	0.01	6.08	
99W2104-MB-01		Water	02/25/99	02/25/99	02/25/99	99W2104	pH unit	0.01	6.05	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Cooler 1-02-25-99

Applied P & Ch Laboratory

APCL

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Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 2

Client: CDM Federal Contact: Dave Bjosted Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs Job # 6210-014 P.O. #

Project Address 6210-014 - Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: B. Boyd, D. Bjosted

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	PCBs 8082	Metals 6010C	TPH-ext-8015	HI 8015/8040	Remarks
	995Y-HI8a-S-1	2-25-99	0840	soil	4°C	2	X	X	X	X	X	X	
	995Y-HI8a-W-11.4		0910	water	yes	7	X	X	X	X	X	X	
	995Y-HI8d-S-1		0845	soil	4°C	4	X	X	X	X	X	X	MS/MSD
	995Y-HI8d-W-11.4		0910	water	yes	8	X	X		X			MS/MSD
	995Y-HI8b-S-1		0935	soil	4°C	2	X	X	X	X	X	X	
	995Y-HI8b-W-10.1		1000	water	yes	2	X						
	995Y-HI8c-S-1		1020	soil	4°C	2	X	X	X	X	X	X	
	995Y-HI8c-W-11.4		1045	water	yes	2	X						
	995Y-BT1p-W-10		0900	water	HCl	2	X						
	995Y-US2a-W-9.6		1210	water	HCl	2	X						
	995Y-US2a-S-7.5		1235	soil	4°C	2	X	X		X			
	995Y-US4a-S-8		1315	soil	4°C	2	X	X		X			
	995Y-US4a-W-11.3		1325	water	HCl	2	X						
	995Y-US4b-S-6		1400	soil	4°C	2	X	X		X			
	995Y-US4b-W-8.1	↓	1430	water	HCL	2	X						

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjosted Date/Time 2/25/99 / 1700 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

APCL

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

~~DB~~ 1R-02-25-99

Chain of Custody

Please Print in pen Page 2 of 2

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs | Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Boyd, D. Bjostad

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	Metals 6010C	pH 9045/9040	Remarks
	995Y-AD4a-S-2	2-25-99	1505	soil	4°C	2	X	X	X	X	
	995Y-AD4a-W-10.8	2-25-99	1515	water	HCl	2	X				

D. Bjostad

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QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

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APCL Form 4-101, Ver. 4.0, Dec. 20, 1994.

Root-file:[CUST.DATA.LAB]CHAIN-ROOT.TEX File:[CUST.DATA.LAB]CHAIN4.TEX

Cooler 2-02-25-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs | Job #6210-014 | P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] Regular [ ] rush: ___ days ___ hours | Sampled by: B. Boyd, D. Bjostad

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Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: PCBs 8082	TPH-ext. 8015m	SVOCs 8270C	Metals 6010C	pH 9040	Remarks
	995Y-HI8b-W-10.1	2-25-99	1000	water	metals-HNO_3	5	X	X	X	X	X	
	995Y-HI8d-W-11.4	2-25-99	0910	water	4°C	6	X	X			X	MS/MSD. Test pH from one liter amber.
	RB-1d											
	D Bjostad											

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

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Relinquished by D Bjostad | Date/Time 2/25/99 /1700 | Received by | Date/Time /

Relinquished by | Date/Time / | Received by | Date/Time /

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Cooler 3-02-25-99

Chain of Custody

Applied P & Ch Laboratory

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Address: 3760 Convoy St., Ste. 310 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: B. Boyd, D. Bjostad

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Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270C	PCBs 8082	Metals 6010C	TPH ext. 8015M	pH 9040	Remarks
	995Y-HI8c-W-11.4	2-25-99	1045	water	metals-HNO_3	5	X	X	X	X	X	
	995Y-US2a-W-9.6	2-25-99	1210	water	metals-HNO_3	2	X		X			
	~~995Y-US2a-S-DB~~	~~2-25-99~~ DB										
	995Y-US4a-W-11.3	2-25-99	1325	water	metals-HNO_3	2	X		X			
	995Y-US4b-W-8.1	↓	1430	water	metals-HNO_3	2	X		X			
	~~995Y-US5~~ DB	↓	~~1515~~	~~water~~ DB								
	995Y-AD4a-W-10.8	↓	1515	water	metals-HNO_3	3	X		X		X	

RBoyd
Dave Bjostad

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by	Date/Time /	Received by	Date/Time /
Relinquished by	Date/Time /	Received by	Date/Time /

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD4b-S-2
99SY-AD-4b-W-11.7
99SY-AD8a-S-1
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14**
99SY-BT1a-W-7
99SY-PT3a-S-2
99SY-PT3a-W-9
99SY-PT3e-S-2
99SY-PT3e-W-14.4
99SY-PT3e-W-14.4RE
99SY-AD4b-S-2MS
99SY-AD4b-S-2MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/4/99	Tetrachloroethene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene 1,2,3-Trichlorobenzene	26.3 31.0 25.2 33.9 36.6	All water samples in SDG 99-2110	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1a-W-7 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1a-W-7	2/26/99	Chloroform	15 ug/L	99SY-AD4b-S-2 99SY-AD-4b-W-11.7 99SY-AD8a-S-1 99SY-AD8a-W-13 99SY-AD9a-S-1 99SY-AD9a-W-13.4 99SY-AD9b-S-1 99SY-AD9b-W-14** 99SY-PT3a-S-2 99SY-PT3a-W-9 99SY-PT3e-S-2 99SY-PT3e-W-14.4 99SY-PT3e-W-14.4RE

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-AD-4b-W-11.7	Chloroform	2 ug/L	5U ug/L
99SY-AD9a-W-13.4	Chloroform	2 ug/L	5U ug/L
99SY-AD9b-W-14**	Chloroform	1 ug/L	5U ug/L
99SY-PT3e-W-14.4	Chloroform	0.9 ug/L	5U ug/L
99SY-PT3e-W-14.4RE	Chloroform	0.8 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits. with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99G1779-MB-01	Bromofluorobenzene	72 (80-119)	All TCL compounds	J	P
99SY-BT1a-W-7	Bromofluorobenzene	78 (80-119)	All TCL compounds	J	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99SY-PT3a-W-9	Bromofluorobenzene	79 (80-119)	All TCL compounds	J	P
99SY-PT3e-W-14.4	Dibromofluoromethane 1,2-Dichloroethane-d4	129 (79-120) 127 (81-119)	All TCL compounds	J (all detects)	A
99SY-PT3e-W-14.4RE	Bromofluorobenzene	76 (80-119)	All TCL compounds	J	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
99SY-PT3e-W-14.4RE	All TCL compounds	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2110

SDG	Sample	Compound	Flag	A or P	Reason
99-2110	99SY-AD-4b-W-11.7 99SY-AD8a-W-13 99SY-AD9a-W-13.4 99SY-AD9b-W-14** 99SY-BT1a-W-7 99SY-PT3a-W-9 99SY-PT3e-W-14.4 99SY-PT3e-W-14.4RE	Tetrachloroethene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene 1,2,3-Trichlorobenzene	J	A	Continuing calibration (%D)
99-2110	99SY-BT1a-W-7 99SY-PT3a-W-9	All TCL compounds	J	P	Surrogate spikes (%R)
99-2110	99SY-PT3e-W-14.4	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)
99-2110	99SY-PT3e-W-14.4RE	All TCL compounds	J	A	Surrogate spikes (%R)
99-2110	99SY-PT3e-W-14.4RE	All TCL compounds	R	A	Overall assessment of data

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2110

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2110	99SY-AD-4b-W-11.7	Chloroform	5U ug/L	A
99-2110	99SY-AD9a-W-13.4	Chloroform	5U ug/L	A
99-2110	99SY-AD9b-W-14**	Chloroform	5U ug/L	A
99-2110	99SY-PT3e-W-14.4	Chloroform	5U ug/L	A
99-2110	99SY-PT3e-W-14.4RE	Chloroform	5U ug/L	A

D

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-1	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-S-2**	Sample Matrix	Soil	Moisture %:	3.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	–	Anal. Time:	16:30
Data File Name:	2110-01	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

5515

4/18/99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	91
3	1,2-Dichloroethane-d4	17060-07-0	75-129	82
4	Toluene-d8	2037-26-5	80-119	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	105
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-2	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	21:30
Data File Name:	2110-02	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~2~~	~~J~~ 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	89
2	Dibromofluoromethane	1868-53-7	79-120	118
3	1,2-Dichloroethane-d4	17060-07-0	81-119	118
4	Toluene-d8	2037-26-5	81-118	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	102
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
3	Fluorobenzene	462-06-6	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	–	Anal. Time:	17:01
Data File Name:	2110-03	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.9	< 5.9	U
2	Bromobenzene	108-86-1	µg/kg	5.9	< 5.9	U
3	Bromochloromethane	74-97-5	µg/kg	5.9	< 5.9	U
4	Bromodichloromethane	75-27-4	µg/kg	5.9	< 5.9	U
5	Bromoform	75-25-2	µg/kg	5.9	< 5.9	U
6	Bromomethane	74-83-9	µg/kg	5.9	< 5.9	U
7	n-Butylbenzene	104-51-8	µg/kg	5.9	< 5.9	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.9	< 5.9	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.9	< 5.9	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.9	< 5.9	U
11	Chlorobenzene	108-90-7	µg/kg	5.9	< 5.9	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.9	< 5.9	U
13	Chloroethane	75-00-3	µg/kg	5.9	< 5.9	U
14	Chloroform	67-66-3	µg/kg	5.9	< 5.9	U
15	Chloromethane	74-87-3	µg/kg	5.9	< 5.9	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.9	< 5.9	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.9	< 5.9	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.9	< 5.9	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.9	< 5.9	U
20	Dibromomethane	74-95-3	µg/kg	5.9	< 5.9	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.9	< 5.9	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.9	< 5.9	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.9	< 5.9	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.9	< 5.9	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.9	< 5.9	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.9	< 5.9	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.9	< 5.9	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.9	< 5.9	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.9	< 5.9	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.9	< 5.9	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.9	< 5.9	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.9	< 5.9	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.9	< 5.9	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.9	< 5.9	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.9	< 5.9	U
36	Ethylbenzene	100-41-4	µg/kg	5.9	< 5.9	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.9	< 5.9	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.9	< 5.9	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.9	< 5.9	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.9	< 5.9	U
41	Naphthalene	91-20-3	µg/kg	5.9	< 5.9	U
42	n-Propylbenzene	103-65-1	µg/kg	5.9	< 5.9	U
43	Styrene	100-42-5	µg/kg	5.9	< 5.9	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.9	< 5.9	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.9	< 5.9	U
46	Tetrachloroethene	127-18-4	µg/kg	5.9	< 5.9	U
47	Toluene	108-88-3	µg/kg	5.9	< 5.9	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.9	< 5.9	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.9	< 5.9	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.9	< 5.9	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.9	< 5.9	U
52	Trichloroethene	79-01-6	µg/kg	5.9	< 5.9	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.9	< 5.9	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.9	< 5.9	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.9	< 5.9	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.9	< 5.9	U
57	Vinyl chloride	75-01-4	µg/kg	5.9	< 5.9	U
58	o-Xylene	95-47-6	µg/kg	5.9	< 5.9	U
59	m/p-Xylene	108-38-3	µg/kg	5.9	< 5.9	U
60	Xylenes (total)	1330-20-7	µg/kg	5.9	< 5.9	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	91
3	1,2-Dichloroethane-d4	17060-07-0	75-129	85
4	Toluene-d8	2037-26-5	80-119	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
3	Fluorobenzene	462-06-6	50-200	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-4	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-W-13**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	21:57
Data File Name:	2110-04	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	<5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	86
2	Dibromofluoromethane	1868-53-7	79-120	111
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	108
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	–	Anal. Time:	17:32
Data File Name:	2110-05	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	92
3	1,2-Dichloroethane-d4	17060-07-0	75-129	84
4	Toluene-d8	2037-26-5	80-119	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	95
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	–	Anal. Time:	22:25
Data File Name:	2110-06	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	~~U~~ 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	1	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	88
2	Dibromofluoromethane	1868-53-7	79-120	112
3	1,2-Dichloroethane-d4	17060-07-0	81-119	114
4	Toluene-d8	2037-26-5	81-118	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	109
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
3	Fluorobenzene	462-06-6	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	–	Anal. Time:	18:03
Data File Name:	2110-07	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	93
3	1,2-Dichloroethane-d4	17060-07-0	75-129	88
4	Toluene-d8	2037-26-5	80-119	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	90
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	89
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	22:52
Data File Name:	2110-08	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~1~~	~~J~~ SH
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	2	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	84
2	Dibromofluoromethane	1868-53-7	79-120	109
3	1,2-Dichloroethane-d4	17060-07-0	81-119	112
4	Toluene-d8	2037-26-5	81-118	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	106
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-9	Received Date:	02/26/1999
Sample ID:	**99SY-BT1A-W-7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	23:20
Data File Name:	2110-09	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	UJ
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	15	J
15	Chloromethane	74-87-3	µg/L	5	< 5	UJ
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	UJ
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	78
2	Dibromofluoromethane	1868-53-7	79-120	107
3	1,2-Dichloroethane-d4	17060-07-0	81-119	109
4	Toluene-d8	2037-26-5	81-118	83
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	107
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	74
3	Fluorobenzene	462-06-6	50-200	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-10	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-S-2**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	–	Anal. Time:	18:33
Data File Name:	2110-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	92
3	1,2-Dichloroethane-d4	17060-07-0	75-129	90
4	Toluene-d8	2037-26-5	80-119	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-11	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	23:47
Data File Name:	2110-11	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U UJ
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	79
2	Dibromofluoromethane	1868-53-7	79-120	106
3	1,2-Dichloroethane-d4	17060-07-0	81-119	111
4	Toluene-d8	2037-26-5	81-118	85
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	108
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
3	Fluorobenzene	462-06-6	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-12	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-S-2**	Sample Matrix	Soil	Moisture %:	8.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1730	Prep. No:	-	Anal. Time:	19:04
Data File Name:	2110-12	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	92
4	Toluene-d8	2037-26-5	80-119	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	81
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	81
3	Fluorobenzene	462-06-6	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	00:15
Data File Name:	2110-13	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	~~0.8~~	~~J~~ 5UJ
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	<5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	4	J J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	95
2	Dibromofluoromethane	1868-53-7	79-120	129
3	1,2-Dichloroethane-d4	17060-07-0	81-119	127
4	Toluene-d8	2037-26-5	81-118	102
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
3	Fluorobenzene	462-06-6	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13RE	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4RE**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	00:42
Data File Name:	2110-13A	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U R
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	0.8	J
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	4	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U R
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1.2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	0.6	J
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	76
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	98
4	Toluene-d8	2037-26-5	81-118	87
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	118
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	141
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

AU1879 5573

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD4b-S-2
99SY-AD4b-W-11.7
99SY-AD8a-S-1
99SY-AD8a-S-1RE
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14
99SY-PT3a-S-2
99SY-PT3a-W-9
99SY-PT3e-S-2
99SY-PT3e-W-14.4

Introduction

This data review covers 7 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/8/99	Bis(2-chloroethyl) ether 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	33.4 37.9 25.9	99SY-AD9a-S-1 99SY-AD9b-S-1 99SY-AD4b-S-2 99SY-AD8a-S-1RE	J J J	A
3/5/99	2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	29.2 29.6	99SY-AD8a-S-1	J J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-AD8a-S-1RE	Perylene-d12	117675 (140788-563152)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
99SY-AD8a-S-1	Perylene-d12	133342 (204768-819074)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
99SY-AD8a-S-1RE	All TCL compounds	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2110

SDG	Sample	Compound	Flag	A or P	Reason
99-2110	99SY-AD9a-S-1 99SY-AD9b-S-1 99SY-AD4b-S-2 99SY-AD8a-S-1RE	Bis(2-chloroethyl) ether 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	J J J	A	Continuing calibration (%D)
99-2110	99SY-AD8a-S-1	2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	J J	A	Continuing calibration (%D)
99-2110	99SY-AD8a-S-1RE 99SY-AD8a-S-1	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A	Internal standards (area)
99-2110	99SY-AD8a-S-1RE	All TCL compounds	R	A	Overall assessment of data

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

D

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-1	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-S-2**	Sample Matrix	Soil	Moisture %:	3.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/09/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	00:49
Data File Name:	2110-01B	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	[redacted]	
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	74
2	2-Fluorophenol	367-12-4	25-103	69
3	Nitrobenzene-d5	4165-60-0	23-119	81
4	Phenol-d5	4165-62-2	24-112	69
5	Terphenyl-d14	1718-51-0	18-136	105
6	2,4,6-Tribromophenol	118-79-6	20-119	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	87
2	Chrysene-d12	1719-03-5	50-200	63
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	89
5	Perylene-d12	1520-96-3	50-200	56
6	Phenanthrene-d10	1517-22-2	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-2	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	20:35
Data File Name:	2110-02	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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4/15/99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	63
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	65
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	88
6	2,4,6-Tribromophenol	118-79-6	10-122	64
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	133
2	Chrysene-d12	1719-03-5	50-200	106
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	130
4	Naphthalene-d8	1146-65-2	50-200	134
5	Perylene-d12	1520-96-3	50-200	115
6	Phenanthrene-d10	1517-22-2	50-200	134
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	3.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/06/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	03:18
Data File Name:	2110-03	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U UJ
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U UJ
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	28
2	2-Fluorophenol	367-12-4	25-103	28
3	Nitrobenzene-d5	4165-60-0	23-119	29
4	Phenol-d5	4165-62-2	24-112	27
5	Terphenyl-d14	1718-51-0	18-136	45
6	2,4,6-Tribromophenol	118-79-6	20-119	30
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	74
2	Chrysene-d12	1719-03-5	50-200	54
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	68
4	Naphthalene-d8	1146-65-2	50-200	71
5	Perylene-d12	1520-96-3	50-200	33
6	Phenanthrene-d10	1517-22-2	50-200	74
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3RE	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1RE**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/09/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	01:30
Data File Name:	2110-03B	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	590	< 590	U R
2	Acenaphthylene	208-96-8	µg/kg	590	< 590	U
3	Anthracene	120-12-7	µg/kg	590	< 590	U
4	Benz(a)anthracene	56-55-3	µg/kg	590	< 590	U
5	Benzo(a)pyrene	50-32-8	µg/kg	590	< 590	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	590	< 590	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	590	< 590	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	590	< 590	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	590	< 590	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	590	< 590	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	590	< 590	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	590	< 590	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	590	< 590	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	590	< 590	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	590	< 590	U
18	2-Chlorophenol	95-57-8	µg/kg	590	< 590	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	590	< 590	U
20	Chrysene	218-01-9	µg/kg	590	< 590	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	590	< 590	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	590	< 590	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	590	< 590	U
24	Dibenzofuran	132-64-9	µg/kg	590	< 590	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	590	< 590	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	590	< 590	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	590	< 590	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	590	< 590	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	590	< 590	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	590	< 590	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	590	< 590	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	590	< 590	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	590	< 590	U
37	Fluoranthene	206-44-0	µg/kg	590	< 590	U
38	Fluorene	86-73-7	µg/kg	590	< 590	U
39	Hexachlorobenzene	118-74-1	µg/kg	590	< 590	U
40	Hexachlorobutadiene	87-68-3	µg/kg	590	< 590	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	590	<590	U
42	Hexachloroethane	67-72-1	µg/kg	590	<590	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	590	<590	U
44	Isophorone	78-59-1	µg/kg	590	<590	U
45	2-Methylnaphthalene	91-57-6	µg/kg	590	<590	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	590	<590	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	590	<590	U
48	Naphthalene	91-20-3	µg/kg	590	<590	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	<3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	<3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	<3000	U
52	Nitrobenzene	98-95-3	µg/kg	590	<590	U
53	2-Nitrophenol	88-75-5	µg/kg	590	<590	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	<3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	590	<590	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	590	<590	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	<3000	U
58	Phenanthrene	85-01-8	µg/kg	590	<590	U
59	Phenol	108-95-2	µg/kg	590	<590	U
60	Pyrene	129-00-0	µg/kg	590	<590	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	590	<590	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	590	<590	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	590	<590	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	32
2	2-Fluorophenol	367-12-4	25-103	29
3	Nitrobenzene-d5	4165-60-0	23-119	32
4	Phenol-d5	4165-62-2	24-112	26
5	Terphenyl-d14	1718-51-0	18-136	50
6	2,4,6-Tribromophenol	118-79-6	20-119	35
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	75
2	Chrysene-d12	1719-03-5	50-200	52
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	82
5	Perylene-d12	1520-96-3	50-200	42
6	Phenanthrene-d10	1517-22-2	50-200	76
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-4	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-W-13**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	21:18
Data File Name:	2110-04	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	62
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	66
4	Phenol-d5	4165-62-2	10- 93	30
5	Terphenyl-d14	1718-51-0	33-140	95
6	2,4,6-Tribromophenol	118-79-6	10-122	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	171
2	Chrysene-d12	1719-03-5	50-200	135
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	159
4	Naphthalene-d8	1146-65-2	50-200	168
5	Perylene-d12	1520-96-3	50-200	147
6	Phenanthrene-d10	1517-22-2	50-200	169
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/08/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	23:25
Data File Name:	2110-05B	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	70
2	2-Fluorophenol	367-12-4	25-103	67
3	Nitrobenzene-d5	4165-60-0	23-119	76
4	Phenol-d5	4165-62-2	24-112	63
5	Terphenyl-d14	1718-51-0	18-136	101
6	2,4,6-Tribromophenol	118-79-6	20-119	68
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	71
2	Chrysene-d12	1719-03-5	50-200	50
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	89
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	58
6	Phenanthrene-d10	1517-22-2	50-200	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	22:01
Data File Name:	2110-06	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	65
2	2-Fluorophenol	367-12-4	21- 99	52
3	Nitrobenzene-d5	4165-60-0	35-113	70
4	Phenol-d5	4165-62-2	10- 93	34
5	Terphenyl-d14	1718-51-0	33-140	96
6	2,4,6-Tribromophenol	118-79-6	10-122	75
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	120
2	Chrysene-d12	1719-03-5	50-200	95
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	116
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	107
6	Phenanthrene-d10	1517-22-2	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/09/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	00:07
Data File Name:	2110-07B	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	U UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U UJ
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	60
2	2-Fluorophenol	367-12-4	25-103	53
3	Nitrobenzene-d5	4165-60-0	23-119	66
4	Phenol-d5	4165-62-2	24-112	53
5	Terphenyl-d14	1718-51-0	18-136	80
6	2,4,6-Tribromophenol	118-79-6	20-119	57
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	82
2	Chrysene-d12	1719-03-5	50-200	58
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	60
6	Phenanthrene-d10	1517-22-2	50-200	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	22:43
Data File Name:	2110-08	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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W4499

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	<10	U
42	Hexachloroethane	67-72-1	µg/L	10	<10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	<10	U
44	Isophorone	78-59-1	µg/L	10	<10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	<10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	<10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	<10	U
48	Naphthalene	91-20-3	µg/L	10	<10	U
49	2-Nitroaniline	88-74-4	µg/L	50	<50	U
50	3-Nitroaniline	99-09-2	µg/L	50	<50	U
51	4-Nitroaniline	100-01-6	µg/L	50	<50	U
52	Nitrobenzene	98-95-3	µg/L	10	<10	U
53	2-Nitrophenol	88-75-5	µg/L	10	<10	U
54	4-Nitrophenol	100-02-7	µg/L	50	<50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	<10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	<10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	<50	U
58	Phenanthrene	85-01-8	µg/L	10	<10	U
59	Phenol	108-95-2	µg/L	10	<10	U
60	Pyrene	129-00-0	µg/L	10	<10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	<10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	<10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	70
2	2-Fluorophenol	367-12-4	21- 99	58
3	Nitrobenzene-d5	4165-60-0	35-113	78
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	105
6	2,4,6-Tribromophenol	118-79-6	10-122	79
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	111
2	Chrysene-d12	1719-03-5	50-200	86
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	108
4	Naphthalene-d8	1146-65-2	50-200	110
5	Perylene-d12	1520-96-3	50-200	98
6	Phenanthrene-d10	1517-22-2	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-10	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-S-2**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	19:25
Data File Name:	2110-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	61
2	2-Fluorophenol	367-12-4	25-103	61
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	57
5	Terphenyl-d14	1718-51-0	18-136	86
6	2,4,6-Tribromophenol	118-79-6	20-119	57
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	105
2	Chrysene-d12	1719-03-5	50-200	86
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	107
4	Naphthalene-d8	1146-65-2	50-200	108
5	Perylene-d12	1520-96-3	50-200	97
6	Phenanthrene-d10	1517-22-2	50-200	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-11	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	23:26
Data File Name:	2110-11	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	60
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	66
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	89
6	2,4,6-Tribromophenol	118-79-6	10-122	64
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	131
2	Chrysene-d12	1719-03-5	50-200	100
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	130
4	Naphthalene-d8	1146-65-2	50-200	134
5	Perylene-d12	1520-96-3	50-200	112
6	Phenanthrene-d10	1517-22-2	50-200	126
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

5808

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-12	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-S-2**	Sample Matrix	Soil	Moisture %:	8.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	23:38
Data File Name:	2110-12	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

5814

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	<540	U
42	Hexachloroethane	67-72-1	µg/kg	540	<540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	<540	U
44	Isophorone	78-59-1	µg/kg	540	<540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	<540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	<540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	<540	U
48	Naphthalene	91-20-3	µg/kg	540	<540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	<2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	<2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	<2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	<540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	<540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	<2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	<540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	<540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	<2700	U
58	Phenanthrene	85-01-8	µg/kg	540	<540	U
59	Phenol	108-95-2	µg/kg	540	<540	U
60	Pyrene	129-00-0	µg/kg	540	<540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	<540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	<540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	<540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	63
2	2-Fluorophenol	367-12-4	25-103	60
3	Nitrobenzene-d5	4165-60-0	23-119	64
4	Phenol-d5	4165-62-2	24-112	57
5	Terphenyl-d14	1718-51-0	18-136	86
6	2,4,6-Tribromophenol	118-79-6	20-119	65
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	82
2	Chrysene-d12	1719-03-5	50-200	69
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	88
5	Perylene-d12	1520-96-3	50-200	82
6	Phenanthrene-d10	1517-22-2	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	00:08
Data File Name:	2110-13	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	[redacted]	[redacted]
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	64
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	68
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	90
6	2,4,6-Tribromophenol	118-79-6	10-122	68
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	126
2	Chrysene-d12	1719-03-5	50-200	99
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	135
4	Naphthalene-d8	1146-65-2	50-200	136
5	Perylene-d12	1520-96-3	50-200	112
6	Phenanthrene-d10	1517-22-2	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

5821

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD8a-S-1**
99SY-AD8a-W-13
99SY-AD9a-S-1**
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14
99SY-PT3a-S-2
99SY-PT3a-W-9
99SY-PT3e-S-2
99SY-PT3e-W-14.4
99SY-PT3a-S-2MS
99SY-PT3a-S-2MSD

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 7 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

D

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/04/99
Batch No:	99G1710	Prep. No:	1 of 1	Anal. Time:	14:13
Data File Name:	2110.003	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	59	< 59	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	120	< 120	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	59	< 59	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	59	< 59	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	59	< 59	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	30	< 30	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	30	10	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	78
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

6006

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-4	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-W-13**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	18:03
Data File Name:	2110.004	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	80
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/99

6010

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/04/99
Batch No:	99G1710	Prep. No:	1 of 1	Anal. Time:	14:37
Data File Name:	2110.005	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	55	<55	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	55	<55	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	55	<55	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	55	<55	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	47 [a]	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	84
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

[a] Result estimated due to interference by Pesticides and Chlordane.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w1999

6013

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	18:28
Data File Name:	2110.006	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	87
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1999

6018

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/04/99
Batch No:	99G1710	Prep. No:	1 of 1	Anal. Time:	15:02
Data File Name:	2110.007	Sample Amount:	30.0 g	Dilution Factor:	1 [a]
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	55	<55	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	55	<55	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	55	<55	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	55	<55	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	<28	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	75
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a]Sample chromatogram contains peaks originated from Pesticides/Chlordane.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6021

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	18:53
Data File Name:	2110.008	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	83
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6025

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-10	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-S-2**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/04/99
Batch No:	99G1710	Prep. No:	1 of 1	Anal. Time:	15:27
Data File Name:	2110.010	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	<56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	<56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	<56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	<56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	39	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	74
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6028

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-11	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	19:17
Data File Name:	2110.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	98
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/1/99

6032

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-12	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-S-2**	Sample Matrix	Soil	Moisture %:	8.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/04/99
Batch No:	99G1710	Prep. No:	1 of 1	Anal. Time:	15:51
Data File Name:	2110.012	Sample Amount:	30.0 g	Dilution Factor:	1 [a]
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	<54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	<54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	<54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	<54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	<27	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	83
2	2,4.5,6-Tetrachloro-m-xylene	877-09-8	37-139	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a]Sample chromatogram contains peaks originated from Pesticides/Chlordane.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6035

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/01/99	Anal. Date:	03/02/99
Batch No:	99G1727	Prep. No:	1 of 1	Anal. Time:	19:42
Data File Name:	2110.013	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	84
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

6039

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD8a-S-1
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14**
99SY-AD8a-S-1[redacted]
99SY-AD8a-S-1[redacted]

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

D

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	-	Anal. Time:	13:06
Data File Name:	2110.003	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6301

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-4	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-W-13**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	–	Anal. Time:	10:52
Data File Name:	2110.004	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6303

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	–	Anal. Time:	13:29
Data File Name:	2110.005	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6305

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	-	Anal. Time:	11:17
Data File Name:	2110.006	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6307

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	–	Anal. Time:	13:51
Data File Name:	2110.007	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6309

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	–	Anal. Time:	11:42
Data File Name:	2110.008	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/1999

6311

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD8a-S-1
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14
99SY-PT3a-S-2
99SY-PT3a-W-9
99SY-PT3e-S-2
99SY-PT3e-W-14.4

Introduction

This data review covers 5 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	16:17
Data File Name:	2110.003	Sample Amount:	20.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	120	[redacted]	J
2	Motor oil		mg/kg	120	[redacted]	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	657
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6393

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-4	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-W-13**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	03:35
Data File Name:	2110.004	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	134
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M4/16/99

6395

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	15:52
Data File Name:	2110.005	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	[redacted]	J
2	Motor oil		mg/kg	11	[redacted]	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	89
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6397

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	04:01
Data File Name:	2110.006	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	15:26
Data File Name:	2110.007	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	[redacted]	J
2	Motor oil		mg/kg	11	44	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	69
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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6401

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	04:27
Data File Name:	2110.008	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	132
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11694

6403

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-10	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-S-2**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	04:54
Data File Name:	2110.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6405

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-11	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	04:54
Data File Name:	2110.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	111
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

6407

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-12	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-S-2**	Sample Matrix	Soil	Moisture %:	8.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	05:19
Data File Name:	2110.012	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	2	J
2	Motor oil		mg/kg	11	7	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	121
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6409

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	05:20
Data File Name:	2110.013	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	119
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

6411

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD4b-S-2
99SY-AD-4b-W-11.7
99SY-AD8a-S-1
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14
99SY-PT3a-S-2
99SY-PT3a-W-9
99SY-PT3e-S-2
99SY-PT3e-W-14.4

Introduction

This data review covers 6 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium	0.036 mg/Kg	All soil samples in SDG 99-2110
ICB/CCB	Antimony Cobalt Lead Selenium Molybdenum	1.9 ug/L 0.3 ug/L 1.0 ug/L 4.9 ug/L 0.7 ug/L	All soil samples in SDG 99-2110
PB (prep blank)	Beryllium Chromium Nickel	0.094 ug/L 1.6 ug/L 0.52 ug/L	All water samples in SDG 99-2110
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Silver Thallium Vanadium Zinc Molybdenum	1.3 ug/L 1.7 ug/L 4.0 ug/L 0.4 ug/L 0.7 ug/L 2.2 ug/L 1.1 ug/L 2.7 ug/L 1.0 ug/L 1.5 ug/L 0.8 ug/L 1.4 ug/L 1.2 ug/L 0.9 ug/L 1.7 ug/L	All water samples in SDG 99-2110

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-AD4b-S-2	Molybdenum	0.089 mg/Kg	0.089U mg/Kg
99SY-AD8a-S-1	Molybdenum	0.32 mg/Kg	0.32U mg/Kg
99SY-AD9a-S-1	Molybdenum	0.38 mg/Kg	0.38U mg/Kg
99SY-AD9b-S-1	Molybdenum	0.21 mg/Kg	0.21U mg/Kg
99SY-PT3a-S-2	Antimony	0.27 mg/Kg	0.27U mg/Kg
99SY-PT3e-S-2	Antimony Molybdenum	0.53 mg/Kg 0.041 mg/Kg	0.53U mg/Kg 0.041U mg/Kg
99SY-AD-4b-W-11.7	Beryllium Nickel	0.097 ug/L 2.5 ug/L	0.097U ug/L 2.5U ug/L
99SY-AD8a-W-13	Nickel Vanadium	2.3 ug/L 1.3 ug/L	2.3U ug/L 1.3U ug/L
99SY-AD9a-W-13.4	Beryllium Nickel Vanadium Molybdenum	0.084 ug/L 2.3 ug/L 1.1 ug/L 7.2 ug/L	0.084U ug/L 2.3U ug/L 1.1U ug/L 7.2U ug/L
99SY-AD9b-W-14	Beryllium Copper Vanadium	0.10 ug/L 1.2 ug/L 1.4 ug/L	0.10U ug/L 1.2U ug/L 1.4U ug/L
99SY-PT3a-W-9	Beryllium Cadmium Molybdenum	0.13 ug/L 0.30 ug/L 5.7 ug/L	0.13U ug/L 0.30U ug/L 5.7U ug/L
99SY-PT3e-W-14.4	Beryllium Copper Molybdenum	0.12 ug/L 1.1 ug/L 5.0 ug/L	0.12U ug/L 1.1U ug/L 5.0U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-AD5f-W-13.5MS/MSD (All water samples in SDG 99-2110)	Barium	71 (75-125)	71 (75-125)	-	J	A
	Chromium	74 (75-125)	73 (75-125)	-	J	
	Cobalt	70 (75-125)	69 (75-125)	-	J	
	Lead	66 (75-125)	66 (75-125)	-	J	
	Molybdenum	72 (75-125)	71 (75-125)	-	J	
	Nickel	71 (75-125)	71 (75-125)	-	J	
	Thallium	63 (75-125)	62 (75-125)	-	J	
99SY-MI8d-S-1MS/MSD (All soil samples in SDG 99-2110)	Selenium	65 (75-125)	65 (75-125)	-	J	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2110

SDG	Sample	Analyte	Flag	A or P	Reason
99-2110	99SY-AD-4b-W-11.7 99SY-AD8a-W-13 99SY-AD9a-W-13.4 99SY-AD9b-W-14 99SY-PT3a-W-9 99SY-PT3e-W-14.4	Barium Chromium Cobalt Lead Molybdenum Nickel Thallium	J J J J J J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2110	99SY-AD4b-S-2 99SY-AD8a-S-1 99SY-AD9a-S-1 99SY-AD9b-S-1 99SY-PT3a-S-2 99SY-PT3e-S-2	Selenium	J	A	Matrix spike/Matrix spike duplicates (%R)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2110

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2110	99SY-AD4b-S-2	Molybdenum	0.089U mg/Kg	A
99-2110	99SY-AD8a-S-1	Molybdenum	0.32U mg/Kg	A
99-2110	99SY-AD9a-S-1	Molybdenum	0.38U mg/Kg	A
99-2110	99SY-AD9b-S-1	Molybdenum	0.21U mg/Kg	A
99-2110	99SY-PT3a-S-2	Antimony	0.27U mg/Kg	A
99-2110	99SY-PT3e-S-2	Antimony Molybdenum	0.53U mg/Kg 0.041U mg/Kg	A
99-2110	99SY-AD-4b-W-11.7	Beryllium Nickel	0.097U ug/L 2.5U ug/L	A
99-2110	99SY-AD8a-W-13	Nickel Vanadium	2.3U ug/L 1.3U ug/L	A
99-2110	99SY-AD9a-W-13.4	Beryllium Nickel Vanadium Molybdenum	0.084U ug/L 2.3U ug/L 1.1U ug/L 7.2U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2110	99SY-AD9b-W-14	Beryllium Copper Vanadium	0.10U ug/L 1.2U ug/L 1.4U ug/L	A
99-2110	99SY-PT3a-W-9	Beryllium Cadmium Molybdenum	0.13U ug/L 0.30U ug/L 5.7U ug/L	A
99-2110	99SY-PT3e-W-14.4	Beryllium Copper Molybdenum	0.12U ug/L 1.1U ug/L 5.0U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-1	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-S-2**	Sample Matrix	Soil	Moisture %:	3.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	<0.077	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	4.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	89.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	<0.0057	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	<0.0088	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	21.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	9.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	15.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	5.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	0.055	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	0.089	~~B~~	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	15.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	<0.15	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	<0.041	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	<0.082	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	34.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	45.4		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-2	Received Date:	02/26/1999
Sample ID:	**99SY-AD4B-W-11.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	66.2		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.097	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	8.6		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.5	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.2	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-3	Received Date:	02/26/1999
Sample ID:	**99SY-AD8A-S-1**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.9	0.59	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	2.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	116		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	<0.0065	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.035	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.59	18.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.59	14.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.59	40.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	13.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	0.69		CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	0.32		P	U	99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	27.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.59	<0.18	U	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.59	<0.048	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.9	<0.095	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.59	29.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.59	79.7		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs
Sample ID: **99SY-AD8A-W-13**
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992110
Lab Sample ID: 99-2110-4
Sample Matrix Water

Collection Date: 02/26/1999
Collected by: BB/DB
Received Date: 02/26/1999
Moisture %: –

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	101		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	9.2		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.3	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.1	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.3	B	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-5	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-S-1**	Sample Matrix	Soil	Moisture %:	9.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	<0.083	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	3.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	219		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0061	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.27		P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	21.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	13.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	28.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	11.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.11	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.38		P	U	99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	28.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	<0.17	U	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	<0.044	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	<0.089	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	31.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	134		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-6	Received Date:	02/26/1999
Sample ID:	**99SY-AD9A-W-13.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	112		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.084	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	7.2		P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.3	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.8	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.1	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-7	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-S-1**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	<0.083	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	3.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	129		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0061	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	<0.0094	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	17.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	10.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	18.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	11.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.084	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.21	~~B~~	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	18.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	<0.17	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	<0.044	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	<0.088	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	28.5		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	53.9		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

8

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-8	Received Date:	02/26/1999
Sample ID:	**99SY-AD9B-W-14**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	133		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.10	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	1.2	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	9.5		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.5	~~B~~	P	J	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	2.5	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.4	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

9

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-10	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-S-2**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.27	~~B~~	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	2.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	51.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	<0.0062	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	<0.0096	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	11.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	5.7		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	6.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	2.4		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	<0.055	U	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	<0.025	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	7.6		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	<0.17	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	<0.045	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	<0.090	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	19.9		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	27.0		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-11	Received Date:	02/26/1999
Sample ID:	**99SY-PT3A-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	86.2		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.13	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	0.30	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.7		~~P~~	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.5	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-12	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-S-2**	Sample Matrix	Soil	Moisture %:	8.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	0.53	~~B~~	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	4.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	51.9		P		99M1330L	03/02/99	03/02/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0060	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.071	B	P		99M1330L	03/02/99	03/02/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	11.1		P		99M1330L	03/02/99	03/02/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	5.3		P		99M1330L	03/02/99	03/02/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	8.0		P		99M1330L	03/02/99	03/02/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	4.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.022	B	CV		99M1338N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.041	~~B~~	P	U	99M1330L	03/02/99	03/02/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	8.2		P		99M1330L	03/02/99	03/02/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	<0.16	~~U~~	P	UJ	99M1330L	03/02/99	03/02/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.044	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.087	U	P		99M1330L	03/02/99	03/02/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	19.8		P		99M1330L	03/02/99	03/02/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	37.7		P		99M1330L	03/02/99	03/02/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	02/26/1999
Project ID:	LBNSY AOCs	Service ID:	992110	Collected by:	BB/DB
		Lab Sample ID:	99-2110-13	Received Date:	02/26/1999
Sample ID:	**99SY-PT3E-W-14.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	85.6		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.12	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	1.1	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1337N	03/02/99	03/02/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.0	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	11.6		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.7	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

MK 4/99

6516

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: February 26, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2110

Sample Identification

99SY-AD4b-S-2
99SY-AD-4b-W-11.7
99SY-AD8a-S-1
99SY-AD8a-W-13
99SY-AD9a-S-1
99SY-AD9a-W-13.4
99SY-AD9b-S-1
99SY-AD9b-W-14
99SY-PT3a-S-2
99SY-PT3e-S-2

Introduction

This data review covers 6 soil samples and 4 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2110	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2110

SDG	Sample	Analyte	Flag	A or P	Reason
99-2110	99SY-AD4b-S-2 99SY-AD-4b-W-11.7 99SY-AD8a-S-1 99SY-AD8a-W-13 99SY-AD9a-S-1 99SY-AD9a-W-13.4 99SY-AD9b-S-1 99SY-AD9b-W-14 99SY-PT3a-S-2 99SY-PT3e-S-2	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2110

No Sample Data Qualified in this SDG

D

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: LBNSY AOCs Service ID: 992110 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2110-1	99SY-AD4B-S-2	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	8.98	
99-2110-2	99SY-AD4B-W-11.7	Water	02/26/99	02/26/99	02/26/99	99W2132	pH unit	0.01	7.31	
99-2110-3	99SY-AD8A-S-1	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	8.14	
99-2110-4	99SY-AD8A-W-13	Water	02/26/99	02/26/99	02/26/99	99W2132	pH unit	0.01	7.36	
99-2110-5	99SY-AD9A-S-1	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	8.63	
99-2110-6	99SY-AD9A-W-13.4	Water	02/26/99	02/26/99	02/26/99	99W2132	pH unit	0.01	7.29	
99-2110-7	99SY-AD9B-S-1	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	8.98	
99-2110-8	99SY-AD9B-W-14	Water	02/26/99	02/26/99	02/26/99	99W2132	pH unit	0.01	7.30	
99-2110-10	99SY-PT3A-S-2	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	9.14	
99-2110-12	99SY-PT3E-S-2	Soil	02/26/99	02/26/99	03/01/99	99W2188	pH unit	0.01	9.13	
99W2188-MB-01		Soil	03/01/99	03/01/99	03/01/99	99W2188	pH unit	0.01	6.11	
99W2189-MB-01		Water	03/01/99	03/01/99	02/26/99	99W2132	pH unit	0.01	6.11	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

MH 99

6831

Cooler 2-02-26-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Programs Corp. Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St, Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Lenexa, Kansas

Project Name/Code LBNSY AOCs Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] Regular [ ] rush: ___ days ___ hours Sampled by: B. Boyd, D. Bjostad

White – With report
Yellow – Lab copy
Pink – Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	Metals 6010B	PCBs 8082	Cyanide 9010	TPH-ext. 8015	TPH-P&T 8015	Remarks
	995Y-AD9a-W-13.4	2/26/99	1155	water	metals-HNO_3	4		X	X	X	X	X		
	995Y-PT3e-W-14.4	2/26/99	1305	water	metals-HNO_3	4		X	X	X		X		
	995Y-PT3a-W-9	2/26/99	1450	water	metals-HNO_3	4		X	X	X		X		

D. Bjostad
B Boyd

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by D. Bjostad Date/Time 2/26/99 / 1545 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

APCL

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Cooler 1-02-26-99

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619 268-9677

Address: 3760 Convoy St STE 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: LENEXA, KANSAS

Project Name/Code CBNSY GROUP B ADCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: B Boyd D Bjostad

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	VOC 8260B	SVOC 8270C	METALS 6010B	PCBs 8082	pH 9045B	pH 9040B (water)	TPH-ext 8015M	TPH-p/T 8015M	Remarks
	99SY-BT1g-W-7	2/26/99	0830	Water	HCL	2	X								
	99SY-AD4b-S-2	2/26/99	0755	Soil	4°C	2	X	X	X		X				
	99SY-AD4b-W-11.7	2/26/99	0800	WATER	YES	5	X	X	X			X			
	99SY-AD8a-S-1	2/26/99	0900	Soil	4°C	2	X	X	X	X	X		X	X	
	99SY-AD8a-W-13	2/26/99	0915	Water	YES	9	X	X	X	X		X	X	X	
	99SY-AD9b-S-1	2/26/99	1010	Soil	4°C	2	X	X	X	X	X		X	X	
	99SY-AD9a-S-1	2/26/99	1140	soil	4°C	2	X	X	X	X	X		X	X	
	99SY-AD9b-W-14	2/26/99	1020	water	yes	~~8~~ 8 DB	X	X	X	X	~~X~~ DB	X	X	X	
	99SY-AD9a-W-13.4	2/26/99	1155	water	yes	8	X					X		X	
	99SY-PT3e-S-2	2/26/99	1255	soil	4°c	2	X	X	X	X		DB	X		
	99SY-PT3e-W-14.4	2/26/99	1305	water	HCl	2	X								
	99SY-PT3a-S-2	2/26/99	1440	soil	4°C	2	X	X	X	X			X		
	99SY-PT3a-W-9	2/26/99	1450	water	HCl	2	X								

D Bjostad
B Boyd

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other ________ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for ______ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # ________ Temperature: ☐ Room ☐ Cold (______ °C).

Relinquished by Dave Bjostad	Date/Time 2/26/99 / 1545	Received by	Date/Time /
Relinquished by	Date/Time /	Received by	Date/Time /

APCL USE ONLY Service # Note:

Clients und[...]d that all terms described in the proposals, quotations for this project, and/or t[...]eral terms provided in the current APCL price schedules will be followed. APCL [...]es the right to terminat[...]ervice or withhold delivery of any reports, if in APCL's sole discretion the terms [...] project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6
99SY-AD5a-W-13.5**
99SY-AD5c-S-6
99SY-AD5c-W-13.5
99SY-AD5f-S-6
99SY-AD5f-W-13.5
99SY-BT1r-W-9
99SY-MI6a-S-5
99SY-MI6a-W-11.2
99SY-MI6b-S-5
99SY-MI6b-W-12.1
99SY-PT3b-S-2
99SY-PT3b-W-8.5
99SY-PT3c-S-2
99SY-PT3c-W-12**
99SY-PT3d-S-2
99SY-PT3d-W-12
99SY-AD5f-W-13.5MS
99SY-AD5f-W-13.5MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/5/99	Dichlorodifluoromethane	28.6	99SY-AD5c-S-6	J	A
	Bromomethane	26.8	99SY-MI6a-S-5	J	
	Trichlorofluoromethane	30.9	99SY-MI6b-S-5	J	
	2,2-Dichloropropane	31.9	99SY-PT3b-S-2	J	
	1,1,2,2-Tetrachloroethane	28.0	99SY-PT3c-S-2	J	
	Naphthalene	32.6	99G1768-MB-02	J	
3/4/99	Tetrachloroethene	26.3	All water samples in	J	A
	1,2-Dibromo-3-chloropropane	31.0	SDG 99-2139	J	
	1,2,4-Trichlorobenzene	25.2		J	
	Hexachlorobutadiene	33.9		J	
	1,2,3-Trichlorobenzene	36.6		J	

Date	Compound	%D	Associated Samples	Flag	A or P
3/8/99	n-Butylbenzene Naphthalene	26.3 32.4	99SY-AD5a-S-6 99G1844-MB-01	J J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1r-W-9 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1r-W-9	3/1/99	Chloroform	15 ug/L	99SY-AD5a-S-6 99SY-AD5a-W-13.5** 99SY-AD5c-S-6 99SY-AD5c-W-13.5 99SY-AD5f-S-6 99SY-AD5f-W-13.5 99SY-MI6a-S-5 99SY-MI6a-W-11.2 99SY-MI6b-S-5 99SY-MI6b-W-12.1 99SY-PT3b-S-2 99SY-PT3b-W-8.5 99SY-PT3c-S-2 99SY-PT3c-W-12** 99SY-PT3d-S-2 99SY-PT3d-W-12

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-AD5a-W-13.5**	Chloroform	1 ug/L	5U ug/L
99SY-AD5c-W-13.5	Chloroform	1 ug/L	5U ug/L
99SY-AD5f-W-13.5	Chloroform	2 ug/L	5U ug/L
99SY-MI6a-W-11.2	Chloroform	2 ug/L	5U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-MI6b-W-12.1	Chloroform	1 ug/L	5U ug/L
99SY-PT3b-W-8.5	Chloroform	0.8 ug/L	5U ug/L
99SY-PT3c-W-12**	Chloroform	1 ug/L	5U ug/L
99SY-PT3d-W-12	Chloroform	2 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99G1779-MB-01	Bromofluorobenzene	72 (80-119)	All TCL compounds	J	P
99SY-PT3c-W-12**	Bromofluorobenzene	79 (80-119)	All TCL compounds	J	P
99SY-PT3d-W-12	Bromofluorobenzene	79 (80-119)	All TCL compounds	J	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 and samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-AD5c-W-13.5	99SY-AD5f-W-13.5			
Chloroform	1	2	67 (≤20)	J	A

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2139

SDG	Sample	Compound	Flag	A or P	Reason
99-2139	99SY-AD5c-S-6 99SY-MI6a-S-5 99SY-MI6b-S-5 99SY-PT3b-S-2 99SY-PT3c-S-2	Dichlorodifluoromethane Bromomethane Trichlorofluoromethane 2,2-Dichloropropane 1,1,2,2-Tetrachloroethane Naphthalene	J J J J J J	A	Continuing calibration (%D)
99-2139	99SY-AD5a-W-13.5** 99SY-AD5c-W-13.5 99SY-AD5f-W-13.5 99SY-BT1r-W-9 99SY-MI6a-W-11.2 99SY-MI6b-W-12.1 99SY-PT3b-W-8.5 99SY-PT3c-W-12** 99SY-PT3d-W-12	Tetrachloroethene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene 1,2,3-Trichlorobenzene	J J J J J	A	Continuing calibration (%D)
99-2139	99SY-AD5a-S-6	n-Butylbenzene Naphthalene	J J	A	Continuing calibration (%D)
99-2139	99SY-PT3c-W-12** 99SY-PT3d-W-12	All TCL compounds	J	P	Surrogate spikes (%R)
99-2139	99SY-AD5c-W-13.5 99SY-AD5f-W-13.5	Chloroform	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2139

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2139	99SY-AD5a-W-13.5**	Chloroform	5U ug/L	A
99-2139	99SY-AD5c-W-13.5	Chloroform	5U ug/L	A
99-2139	99SY-AD5f-W-13.5	Chloroform	5U ug/L	A
99-2139	99SY-MI6a-W-11.2	Chloroform	5U ug/L	A

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2139	99SY-MI6b-W-12.1	Chloroform	5U ug/L	A
99-2139	99SY-PT3b-W-8.5	Chloroform	5U ug/L	A
99-2139	99SY-PT3c-W-12**	Chloroform	5U ug/L	A
99-2139	99SY-PT3d-W-12	Chloroform	5U ug/L	A

E

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-1	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-S-6**	Sample Matrix	Soil	Moisture %:	21.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1844	Prep. No:	–	Anal. Time:	02:25
Data File Name:	2139-01A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.3	<6.3	U
2	Bromobenzene	108-86-1	µg/kg	6.3	<6.3	U
3	Bromochloromethane	74-97-5	µg/kg	6.3	<6.3	U
4	Bromodichloromethane	75-27-4	µg/kg	6.3	<6.3	U
5	Bromoform	75-25-2	µg/kg	6.3	<6.3	U
6	Bromomethane	74-83-9	µg/kg	6.3	<6.3	U
7	n-Butylbenzene	104-51-8	µg/kg	6.3	<6.3	UJ
8	sec-Butylbenzene	135-98-8	µg/kg	6.3	<6.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.3	<6.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.3	<6.3	U
11	Chlorobenzene	108-90-7	µg/kg	6.3	<6.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.3	<6.3	U
13	Chloroethane	75-00-3	µg/kg	6.3	<6.3	U
14	Chloroform	67-66-3	µg/kg	6.3	<6.3	U
15	Chloromethane	74-87-3	µg/kg	6.3	<6.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.3	<6.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.3	<6.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.3	<6.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.3	<6.3	U
20	Dibromomethane	74-95-3	µg/kg	6.3	<6.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.3	<6.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.3	<6.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.3	<6.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.3	<6.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.3	<6.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.3	<6.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.3	<6.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.3	<6.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.3	<6.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.3	<6.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.3	<6.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.3	<6.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.3	<6.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.3	<6.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.3	<6.3	U
36	Ethylbenzene	100-41-4	µg/kg	6.3	<6.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.3	<6.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.3	<6.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.3	<6.3	U

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M4869

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.3	<6.3	U
41	Naphthalene	91-20-3	µg/kg	6.3	<6.3	UJ
42	n-Propylbenzene	103-65-1	µg/kg	6.3	<6.3	U
43	Styrene	100-42-5	µg/kg	6.3	<6.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.3	<6.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.3	<6.3	U
46	Tetrachloroethene	127-18-4	µg/kg	6.3	8	
47	Toluene	108-88-3	µg/kg	6.3	<6.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.3	<6.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.3	<6.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.3	24	
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.3	<6.3	U
52	Trichloroethene	79-01-6	µg/kg	6.3	10	
53	Trichlorofluoromethane	75-69-4	µg/kg	6.3	<6.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.3	<6.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.3	<6.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.3	<6.3	U
57	Vinyl chloride	75-01-4	µg/kg	6.3	<6.3	U
58	o-Xylene	95-47-6	µg/kg	6.3	<6.3	U
59	m/p-Xylene	108-38-3	µg/kg	6.3	<6.3	U
60	Xylenes (total)	1330-20-7	µg/kg	6.3	<6.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	85
2	Dibromofluoromethane	1868-53-7	75-124	91
3	1,2-Dichloroethane-d4	17060-07-0	75-129	83
4	Toluene-d8	2037-26-5	80-119	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	84
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-3	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-S-6**	Sample Matrix	Soil	Moisture %:	13.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1768	Prep. No:	–	Anal. Time:	21:25
Data File Name:	2139-03	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	~~U~~ UJ
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	~~U~~ UJ
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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W4169

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	< 5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	< 5.7	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.7	< 5.7	U
43	Styrene	100-42-5	µg/kg	5.7	< 5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	< 5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	< 5.7	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.7	< 5.7	U
47	Toluene	108-88-3	µg/kg	5.7	< 5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	< 5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	< 5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	< 5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	< 5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	< 5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	< 5.7	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	< 5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	< 5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	< 5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	< 5.7	U
58	o-Xylene	95-47-6	µg/kg	5.7	< 5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	< 5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	< 5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	91
4	Toluene-d8	2037-26-5	80-119	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	84
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-5	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-S-6**	Sample Matrix	Soil	Moisture %:	16.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/07/99	Anal. Date:	03/07/99
Batch No:	99G1829	Prep. No:	–	Anal. Time:	20:55
Data File Name:	2139-05A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.0	<6.0	U
2	Bromobenzene	108-86-1	µg/kg	6.0	<6.0	U
3	Bromochloromethane	74-97-5	µg/kg	6.0	<6.0	U
4	Bromodichloromethane	75-27-4	µg/kg	6.0	<6.0	U
5	Bromoform	75-25-2	µg/kg	6.0	<6.0	U
6	Bromomethane	74-83-9	µg/kg	6.0	<6.0	U
7	n-Butylbenzene	104-51-8	µg/kg	6.0	<6.0	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.0	<6.0	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.0	<6.0	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.0	<6.0	U
11	Chlorobenzene	108-90-7	µg/kg	6.0	<6.0	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.0	<6.0	U
13	Chloroethane	75-00-3	µg/kg	6.0	<6.0	U
14	Chloroform	67-66-3	µg/kg	6.0	<6.0	U
15	Chloromethane	74-87-3	µg/kg	6.0	<6.0	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.0	<6.0	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.0	<6.0	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.0	<6.0	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.0	<6.0	U
20	Dibromomethane	74-95-3	µg/kg	6.0	<6.0	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.0	<6.0	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.0	<6.0	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.0	<6.0	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.0	<6.0	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.0	<6.0	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.0	<6.0	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.0	<6.0	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.0	<6.0	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.0	<6.0	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.0	<6.0	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.0	<6.0	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.0	<6.0	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.0	<6.0	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.0	<6.0	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.0	<6.0	U
36	Ethylbenzene	100-41-4	µg/kg	6.0	<6.0	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.0	<6.0	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.0	<6.0	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.0	<6.0	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.0	<6.0	U
41	Naphthalene	91-20-3	µg/kg	6.0	<6.0	U
42	n-Propylbenzene	103-65-1	µg/kg	6.0	<6.0	U
43	Styrene	100-42-5	µg/kg	6.0	<6.0	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.0	<6.0	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.0	<6.0	U
46	Tetrachloroethene	127-18-4	µg/kg	6.0	<6.0	U
47	Toluene	108-88-3	µg/kg	6.0	<6.0	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.0	<6.0	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.0	<6.0	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.0	<6.0	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.0	<6.0	U
52	Trichloroethene	79-01-6	µg/kg	6.0	<6.0	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.0	<6.0	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.0	<6.0	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.0	<6.0	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.0	<6.0	U
57	Vinyl chloride	75-01-4	µg/kg	6.0	<6.0	U
58	o-Xylene	95-47-6	µg/kg	6.0	<6.0	U
59	m/p-Xylene	108-38-3	µg/kg	6.0	<6.0	U
60	Xylenes (total)	1330-20-7	µg/kg	6.0	<6.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	96
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	83
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-8	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-S-5**	Sample Matrix	Soil	Moisture %:	7.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1768	Prep. No:	–	Anal. Time:	22:27
Data File Name:	2139-08	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	~~U~~ UJ
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	~~U~~ UJ
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.4	4	J
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	6	
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	95
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	74
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	70
3	Fluorobenzene	462-06-6	50-200	64
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-10	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-S-5**	Sample Matrix	Soil	Moisture %:	9.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1768	Prep. No:	-	Anal. Time:	22:57
Data File Name:	2139-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	UJ
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	UJ
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	96
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	80
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-12	Received Date:	03/01/1999
Sample ID:	99SY-PT3B-S-2	Sample Matrix	Soil	Moisture %:	10.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1768	Prep. No:	–	Anal. Time:	23:28
Data File Name:	2139-12	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	2	J
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	~~U~~ UJ
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	~~U~~ UJ
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.6	7	
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	2	J
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	~~U~~ UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	90
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	99
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	80
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	68
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-14	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-S-2**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1768	Prep. No:	–	Anal. Time:	23:59
Data File Name:	2139-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	~~U~~ UJ
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	~~U~~ UJ
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	~~U~~ UJ
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.3	3	J
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U UJ
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	97
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	79
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-16	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-S-2**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/07/99	Anal. Date:	03/07/99
Batch No:	99G1829	Prep. No:	-	Anal. Time:	21:26
Data File Name:	2139-16A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	92
2	Dibromofluoromethane	1868-53-7	75-124	92
3	1,2-Dichloroethane-d4	17060-07-0	75-129	94
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	82
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-2	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	17:21
Data File Name:	2139-02	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	7237

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	1	J
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	91
2	Dibromofluoromethane	1868-53-7	79-120	110
3	1,2-Dichloroethane-d4	17060-07-0	81-119	109
4	Toluene-d8	2037-26-5	81-118	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	101
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
3	Fluorobenzene	462-06-6	50-200	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-4	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	17:48
Data File Name:	2139-04	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J 5W
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	112
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-6	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	18:16
Data File Name:	2139-06	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	7	J SW
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	86
2	Dibromofluoromethane	1868-53-7	79-120	111
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-7	Received Date:	03/01/1999
Sample ID:	**99SY-BT1R-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	–	Anal. Time:	18:44
Data File Name:	2139-07	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	15	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	80
2	Dibromofluoromethane	1868-53-7	79-120	107
3	1,2-Dichloroethane-d4	17060-07-0	81-119	106
4	Toluene-d8	2037-26-5	81-118	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	103
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	87
3	Fluorobenzene	462-06-6	50-200	113
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-9	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-W-11.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	19:11
Data File Name:	2139-09	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	0.8	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	86
2	Dibromofluoromethane	1868-53-7	79-120	108
3	1,2-Dichloroethane-d4	17060-07-0	81-119	110
4	Toluene-d8	2037-26-5	81-118	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	119
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	90
3	Fluorobenzene	462-06-6	50-200	135
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-11	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-W-12.1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	–	Anal. Time:	19:39
Data File Name:	2139-11	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	0.9	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	93
2	Dibromofluoromethane	1868-53-7	79-120	115
3	1,2-Dichloroethane-d4	17060-07-0	81-119	118
4	Toluene-d8	2037-26-5	81-118	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	114
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	129
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7281

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-13	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	20:06
Data File Name:	2139-13	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	0.8	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U 7291

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	~~U~~ UJ
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	~~U~~ UJ
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	~~U~~ UJ
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	88
2	Dibromofluoromethane	1868-53-7	79-120	111
3	1,2-Dichloroethane-d4	17060-07-0	81-119	115
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	108
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	81
3	Fluorobenzene	462-06-6	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99 7292

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-15	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	20:34
Data File Name:	2139-15	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U UJ
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J SJ
15	Chloromethane	74-87-3	µg/L	5	< 5	U UJ
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U 730

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	79
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	111
4	Toluene-d8	2037-26-5	81-118	81
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	115
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
3	Fluorobenzene	462-06-6	50-200	131
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7302

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-17	Received Date:	03/01/1999
Sample ID:	99SY-PT3D-W-12	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Anal. Method:	8260B	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1779	Prep. No:	-	Anal. Time:	21:02
Data File Name:	2139-17	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U UJ
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~2~~	~~J~~ SGJ
15	Chloromethane	74-87-3	µg/L	5	< 5	U UJ
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	~~U~~ UJ
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	1	J UJ
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U UJ
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	~~U~~ UJ
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U 3/31/0
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U UJ

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	79
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	108
4	Toluene-d8	2037-26-5	81-118	82
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	115
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
3	Fluorobenzene	462-06-6	50-200	130
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6
99SY-AD5a-W-13.5
99SY-AD5c-S-6
99SY-AD5c-W-13.5
99SY-AD5f-S-6
99SY-AD5f-W-13.5
99SY-MI6a-S-5
99SY-MI6a-W-11.2
99SY-MI6b-S-5
99SY-MI6b-W-12.1
99SY-PT3b-S-2
99SY-PT3b-W-8.5
99SY-PT3c-S-2
99SY-PT3c-W-12
99SY-PT3d-S-2
99SY-PT3d-W-12
99SY-AD5f-S-6MS
99SY-AD5f-S-6MSD
99SY-AD5f-W-13.5MS
99SY-AD5f-W-13.5MSD

Introduction

This data review covers 10 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/8/99	Bis(2-chloroethyl) ether	33.4	99SY-AD5c-S-6	J	A
	2,4-Dinitrophenol	37.9		J	
	4,6-Dinitro-2-methylphenol	25.9		J	

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 and samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 were identified as field duplicates. No semivolatiles were detected in any of the samples.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2139

SDG	Sample	Compound	Flag	A or P	Reason
99-2139	99SY-AD5c-S-6	Bis(2-chloroethyl) ether 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	J J J	A	Continuing calibration (%D)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

E

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-1	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-S-6**	Sample Matrix	Soil	Moisture %:	21.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	22:56
Data File Name:	2139-01	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	630	< 630	U
2	Acenaphthylene	208-96-8	µg/kg	630	< 630	U
3	Anthracene	120-12-7	µg/kg	630	< 630	U
4	Benz(a)anthracene	56-55-3	µg/kg	630	< 630	U
5	Benzo(a)pyrene	50-32-8	µg/kg	630	< 630	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	630	< 630	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	630	< 630	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	630	< 630	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	630	< 630	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	630	< 630	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	630	< 630	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	630	< 630	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	630	< 630	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	630	< 630	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1300	< 1300	U
16	4-Chloroaniline	106-47-8	µg/kg	1300	< 1300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	630	< 630	U
18	2-Chlorophenol	95-57-8	µg/kg	630	< 630	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	630	< 630	U
20	Chrysene	218-01-9	µg/kg	630	< 630	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	630	< 630	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	630	< 630	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	630	< 630	U
24	Dibenzofuran	132-64-9	µg/kg	630	< 630	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	630	< 630	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	630	< 630	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	630	< 630	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1300	< 1300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	630	< 630	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	630	< 630	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	630	< 630	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	630	< 630	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3200	< 3200	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3200	< 3200	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	630	< 630	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	630	< 630	U
37	Fluoranthene	206-44-0	µg/kg	630	< 630	U
38	Fluorene	86-73-7	µg/kg	630	< 630	U
39	Hexachlorobenzene	118-74-1	µg/kg	630	< 630	U
40	Hexachlorobutadiene	87-68-3	µg/kg	630	< 630	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	630	<630	U
42	Hexachloroethane	67-72-1	µg/kg	630	<630	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	630	<630	U
44	Isophorone	78-59-1	µg/kg	630	<630	U
45	2-Methylnaphthalene	91-57-6	µg/kg	630	<630	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	630	<630	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	630	<630	U
48	Naphthalene	91-20-3	µg/kg	630	<630	U
49	2-Nitroaniline	88-74-4	µg/kg	3200	<3200	U
50	3-Nitroaniline	99-09-2	µg/kg	3200	<3200	U
51	4-Nitroaniline	100-01-6	µg/kg	3200	<3200	U
52	Nitrobenzene	98-95-3	µg/kg	630	<630	U
53	2-Nitrophenol	88-75-5	µg/kg	630	<630	U
54	4-Nitrophenol	100-02-7	µg/kg	3200	<3200	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	630	<630	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	630	<630	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3200	<3200	U
58	Phenanthrene	85-01-8	µg/kg	630	<630	U
59	Phenol	108-95-2	µg/kg	630	<630	U
60	Pyrene	129-00-0	µg/kg	630	<630	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	630	<630	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	630	<630	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	630	<630	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	60
4	Phenol-d5	4165-62-2	24-112	53
5	Terphenyl-d14	1718-51-0	18-136	86
6	2,4,6-Tribromophenol	118-79-6	20-119	60
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	82
2	Chrysene-d12	1719-03-5	50-200	70
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	85
4	Naphthalene-d8	1146-65-2	50-200	85
5	Perylene-d12	1520-96-3	50-200	83
6	Phenanthrene-d10	1517-22-2	50-200	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-2	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	02:15
Data File Name:	2139-02	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

NNSC97568

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	65
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	69
4	Phenol-d5	4165-62-2	10- 93	39
5	Terphenyl-d14	1718-51-0	33-140	94
6	2,4,6-Tribromophenol	118-79-6	10-122	68
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	100
2	Chrysene-d12	1719-03-5	50-200	75
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-3	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-S-6**	Sample Matrix	Soil	Moisture %:	13.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/08/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	22:00
Data File Name:	2139-03B	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	570	< 570	U
2	Acenaphthylene	208-96-8	µg/kg	570	< 570	U
3	Anthracene	120-12-7	µg/kg	570	< 570	U
4	Benz(a)anthracene	56-55-3	µg/kg	570	< 570	U
5	Benzo(a)pyrene	50-32-8	µg/kg	570	< 570	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	570	< 570	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	570	< 570	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	570	< 570	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	570	< 570	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	570	< 570	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	570	< 570	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	570	< 570	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	570	< 570	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	570	< 570	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	570	< 570	U
18	2-Chlorophenol	95-57-8	µg/kg	570	< 570	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	570	< 570	U
20	Chrysene	218-01-9	µg/kg	570	< 570	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	570	< 570	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	570	< 570	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	570	< 570	U
24	Dibenzofuran	132-64-9	µg/kg	570	< 570	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	570	< 570	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	570	< 570	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	570	< 570	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	570	< 570	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	570	< 570	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	570	< 570	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	570	< 570	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	570	< 570	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	570	< 570	U
37	Fluoranthene	206-44-0	µg/kg	570	< 570	U
38	Fluorene	86-73-7	µg/kg	570	< 570	U
39	Hexachlorobenzene	118-74-1	µg/kg	570	< 570	U
40	Hexachlorobutadiene	87-68-3	µg/kg	570	< 570	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	570	< 570	U
42	Hexachloroethane	67-72-1	µg/kg	570	< 570	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	< 570	U
44	Isophorone	78-59-1	µg/kg	570	< 570	U
45	2-Methylnaphthalene	91-57-6	µg/kg	570	< 570	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	570	< 570	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	570	< 570	U
48	Naphthalene	91-20-3	µg/kg	570	< 570	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	570	< 570	U
53	2-Nitrophenol	88-75-5	µg/kg	570	< 570	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	570	< 570	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	570	< 570	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	570	< 570	U
59	Phenol	108-95-2	µg/kg	570	< 570	U
60	Pyrene	129-00-0	µg/kg	570	< 570	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	570	< 570	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	570	< 570	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	570	< 570	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	80
2	2-Fluorophenol	367-12-4	25-103	77
3	Nitrobenzene-d5	4165-60-0	23-119	89
4	Phenol-d5	4165-62-2	24-112	73
5	Terphenyl-d14	1718-51-0	18-136	114
6	2,4,6-Tribromophenol	118-79-6	20-119	77
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	112
2	Chrysene-d12	1719-03-5	50-200	83
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	124
4	Naphthalene-d8	1146-65-2	50-200	123
5	Perylene-d12	1520-96-3	50-200	103
6	Phenanthrene-d10	1517-22-2	50-200	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-4	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	02:57
Data File Name:	2139-04	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	56
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	61
4	Phenol-d5	4165-62-2	10- 93	33
5	Terphenyl-d14	1718-51-0	33-140	83
6	2,4,6-Tribromophenol	118-79-6	10-122	62
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	135
2	Chrysene-d12	1719-03-5	50-200	109
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	131
4	Naphthalene-d8	1146-65-2	50-200	134
5	Perylene-d12	1520-96-3	50-200	121
6	Phenanthrene-d10	1517-22-2	50-200	132
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-5	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-S-6**	Sample Matrix	Soil	Moisture %:	16.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	02:25
Data File Name:	2139-05	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	<600	U
2	Acenaphthylene	208-96-8	µg/kg	600	<600	U
3	Anthracene	120-12-7	µg/kg	600	<600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	<600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	<600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	<600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	<600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	<600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	<600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	<600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	<600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	<600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	<600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	<600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	<1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	<1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	<600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	<600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	<600	U
20	Chrysene	218-01-9	µg/kg	600	<600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	<600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	<600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	<600	U
24	Dibenzofuran	132-64-9	µg/kg	600	<600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	<600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	<600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	<600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	<1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	<600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	<600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	<600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	<600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	<3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	<3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	<600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	<600	U
37	Fluoranthene	206-44-0	µg/kg	600	<600	U
38	Fluorene	86-73-7	µg/kg	600	<600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	<600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	<600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	<600	U
42	Hexachloroethane	67-72-1	µg/kg	600	<600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	<600	U
44	Isophorone	78-59-1	µg/kg	600	<600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	<600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	<600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	<600	U
48	Naphthalene	91-20-3	µg/kg	600	<600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	<3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	<3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	<3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	<600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	<600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	<3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	<600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	<600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	<3000	U
58	Phenanthrene	85-01-8	µg/kg	600	<600	U
59	Phenol	108-95-2	µg/kg	600	<600	U
60	Pyrene	129-00-0	µg/kg	600	<600	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	<600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	<600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	<600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	68
2	2-Fluorophenol	367-12-4	25-103	64
3	Nitrobenzene-d5	4165-60-0	23-119	68
4	Phenol-d5	4165-62-2	24-112	62
5	Terphenyl-d14	1718-51-0	18-136	103
6	2,4,6-Tribromophenol	118-79-6	20-119	68
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	71
2	Chrysene-d12	1719-03-5	50-200	57
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
4	Naphthalene-d8	1146-65-2	50-200	77
5	Perylene-d12	1520-96-3	50-200	65
6	Phenanthrene-d10	1517-22-2	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-6	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	03:39
Data File Name:	2139-06	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	55
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	60
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	79
6	2,4,6-Tribromophenol	118-79-6	10-122	62
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	170
2	Chrysene-d12	1719-03-5	50-200	139
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	157
4	Naphthalene-d8	1146-65-2	50-200	164
5	Perylene-d12	1520-96-3	50-200	149
6	Phenanthrene-d10	1517-22-2	50-200	171
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-8	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-S-5**	Sample Matrix	Soil	Moisture %:	7.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	22:14
Data File Name:	2139-08	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	70
2	2-Fluorophenol	367-12-4	25-103	68
3	Nitrobenzene-d5	4165-60-0	23-119	72
4	Phenol-d5	4165-62-2	24-112	67
5	Terphenyl-d14	1718-51-0	18-136	106
6	2,4,6-Tribromophenol	118-79-6	20-119	66
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	83
2	Chrysene-d12	1719-03-5	50-200	66
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
4	Naphthalene-d8	1146-65-2	50-200	95
5	Perylene-d12	1520-96-3	50-200	80
6	Phenanthrene-d10	1517-22-2	50-200	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-9	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-W-11.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	11:37
Data File Name:	2139-09	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	63
2	2-Fluorophenol	367-12-4	21- 99	50
3	Nitrobenzene-d5	4165-60-0	35-113	67
4	Phenol-d5	4165-62-2	10- 93	36
5	Terphenyl-d14	1718-51-0	33-140	98
6	2,4,6-Tribromophenol	118-79-6	10-122	66
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	99
2	Chrysene-d12	1719-03-5	50-200	81
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	89
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-10	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-S-5**	Sample Matrix	Soil	Moisture %:	9.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	21:32
Data File Name:	2139-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	66
2	2-Fluorophenol	367-12-4	25-103	66
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	62
5	Terphenyl-d14	1718-51-0	18-136	95
6	2,4,6-Tribromophenol	118-79-6	20-119	64
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	95
2	Chrysene-d12	1719-03-5	50-200	74
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
4	Naphthalene-d8	1146-65-2	50-200	98
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-11	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-W-12.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	12:22
Data File Name:	2139-11	Sample Amount:	800. mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	56
2	2-Fluorophenol	367-12-4	21- 99	29
3	Nitrobenzene-d5	4165-60-0	35-113	60
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	102
6	2,4,6-Tribromophenol	118-79-6	10-122	62
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	91
2	Chrysene-d12	1719-03-5	50-200	72
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
4	Naphthalene-d8	1146-65-2	50-200	90
5	Perylene-d12	1520-96-3	50-200	79
6	Phenanthrene-d10	1517-22-2	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-12	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-S-2**	Sample Matrix	Soil	Moisture %:	10.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	03:07
Data File Name:	2139-12	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	<560	U
42	Hexachloroethane	67-72-1	µg/kg	560	<560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	<560	U
44	Isophorone	78-59-1	µg/kg	560	<560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	<560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	<560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	<560	U
48	Naphthalene	91-20-3	µg/kg	560	<560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	<2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	<2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	<2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	<560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	<560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	<2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	<560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	<560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	<2800	U
58	Phenanthrene	85-01-8	µg/kg	560	<560	U
59	Phenol	108-95-2	µg/kg	560	<560	U
60	Pyrene	129-00-0	µg/kg	560	<560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	<560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	<560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	<560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	66
2	2-Fluorophenol	367-12-4	25-103	66
3	Nitrobenzene-d5	4165-60-0	23-119	69
4	Phenol-d5	4165-62-2	24-112	59
5	Terphenyl-d14	1718-51-0	18-136	94
6	2,4,6-Tribromophenol	118-79-6	20-119	67
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	65
2	Chrysene-d12	1719-03-5	50-200	52
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	85
4	Naphthalene-d8	1146-65-2	50-200	80
5	Perylene-d12	1520-96-3	50-200	57
6	Phenanthrene-d10	1517-22-2	50-200	65
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-13	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-W-8.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	13:04
Data File Name:	2139-13	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	78
2	2-Fluorophenol	367-12-4	21- 99	60
3	Nitrobenzene-d5	4165-60-0	35-113	82
4	Phenol-d5	4165-62-2	10- 93	48
5	Terphenyl-d14	1718-51-0	33-140	119
6	2,4,6-Tribromophenol	118-79-6	10-122	78
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	89
2	Chrysene-d12	1719-03-5	50-200	72
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
4	Naphthalene-d8	1146-65-2	50-200	88
5	Perylene-d12	1520-96-3	50-200	80
6	Phenanthrene-d10	1517-22-2	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-14	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-S-2**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	20:50
Data File Name:	2139-14	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	62
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	57
4	Phenol-d5	4165-62-2	24-112	54
5	Terphenyl-d14	1718-51-0	18-136	90
6	2,4,6-Tribromophenol	118-79-6	20-119	58
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	103
2	Chrysene-d12	1719-03-5	50-200	80
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	114
4	Naphthalene-d8	1146-65-2	50-200	114
5	Perylene-d12	1520-96-3	50-200	93
6	Phenanthrene-d10	1517-22-2	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-15	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	13:46
Data File Name:	2139-15	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	82
2	2-Fluorophenol	367-12-4	21- 99	67
3	Nitrobenzene-d5	4165-60-0	35-113	86
4	Phenol-d5	4165-62-2	10- 93	52
5	Terphenyl-d14	1718-51-0	33-140	155
6	2,4,6-Tribromophenol	118-79-6	10-122	83
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	97
2	Chrysene-d12	1719-03-5	50-200	78
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-16	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-S-2**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1754	Prep. No:	1 of 1	Anal. Time:	20:08
Data File Name:	2139-16	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	μg/kg	540	<540	U
42	Hexachloroethane	67-72-1	μg/kg	540	<540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	μg/kg	540	<540	U
44	Isophorone	78-59-1	μg/kg	540	<540	U
45	2-Methylnaphthalene	91-57-6	μg/kg	540	<540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	μg/kg	540	<540	U
47	2-Methylphenol (o-Cresol)	95-48-7	μg/kg	540	<540	U
48	Naphthalene	91-20-3	μg/kg	540	<540	U
49	2-Nitroaniline	88-74-4	μg/kg	2700	<2700	U
50	3-Nitroaniline	99-09-2	μg/kg	2700	<2700	U
51	4-Nitroaniline	100-01-6	μg/kg	2700	<2700	U
52	Nitrobenzene	98-95-3	μg/kg	540	<540	U
53	2-Nitrophenol	88-75-5	μg/kg	540	<540	U
54	4-Nitrophenol	100-02-7	μg/kg	2700	<2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	μg/kg	540	<540	U
56	N-Nitrosodiphenylamine	86-30-6	μg/kg	540	<540	U
57	Pentachlorophenol (PCP)	87-86-5	μg/kg	2700	<2700	U
58	Phenanthrene	85-01-8	μg/kg	540	<540	U
59	Phenol	108-95-2	μg/kg	540	<540	U
60	Pyrene	129-00-0	μg/kg	540	<540	U
61	1,2,4-Trichlorobenzene	120-82-1	μg/kg	540	<540	U
62	2,4,5-Trichlorophenol	95-95-4	μg/kg	540	<540	U
63	2,4,6-Trichlorophenol	88-06-2	μg/kg	540	<540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	55
2	2-Fluorophenol	367-12-4	25-103	53
3	Nitrobenzene-d5	4165-60-0	23-119	52
4	Phenol-d5	4165-62-2	24-112	49
5	Terphenyl-d14	1718-51-0	18-136	86
6	2,4,6-Tribromophenol	118-79-6	20-119	54
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	99
2	Chrysene-d12	1719-03-5	50-200	108
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
4	Naphthalene-d8	1146-65-2	50-200	111
5	Perylene-d12	1520-96-3	50-200	95
6	Phenanthrene-d10	1517-22-2	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-17	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1765	Prep. No:	1 of 1	Anal. Time:	14:28
Data File Name:	2139-17	Sample Amount:	800. mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	81
2	2-Fluorophenol	367-12-4	21- 99	68
3	Nitrobenzene-d5	4165-60-0	35-113	87
4	Phenol-d5	4165-62-2	10- 93	50
5	Terphenyl-d14	1718-51-0	33-140	112
6	2,4,6-Tribromophenol	118-79-6	10-122	83
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	92
2	Chrysene-d12	1719-03-5	50-200	98
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
4	Naphthalene-d8	1146-65-2	50-200	100
5	Perylene-d12	1520-96-3	50-200	97
6	Phenanthrene-d10	1517-22-2	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-PT3b-S-2
99SY-PT3b-W-8.5
99SY-PT3c-S-2
99SY-PT3c-W-12
99SY-PT3d-S-2
99SY-PT3d-W-12
99SY-PT3d-S-2MS
99SY-PT3d-S-2MSD

Introduction

This data review covers 5 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2139	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2139

SDG	Sample	Compound	Flag	A or P	Reason
99-2139	99SY-PT3b-W-8.5 99SY-PT3c-W-12 99SY-PT3d-W-12	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

E

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-12	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-S-2**	Sample Matrix	Soil	Moisture %:	10.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/02/99	Anal. Date:	03/03/99
Batch No:	99G1750	Prep. No:	1 of 1	Anal. Time:	06:39
Data File Name:	2139.012	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	<56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	<56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	<56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	<56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	<28	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	75
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-13	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-W-8.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/05/99	Anal. Date:	03/06/99
Batch No:	99G1798	Prep. No:	1 of 1	Anal. Time:	03:02
Data File Name:	2139.013	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	75
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-14	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-S-2**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/02/99	Anal. Date:	03/03/99
Batch No:	99G1750	Prep. No:	1 of 1	Anal. Time:	07:03
Data File Name:	2139.014	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	53	<53	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	53	<53	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	53	<53	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	53	<53	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	<26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	<26	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	84
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-15	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/05/99	Anal. Date:	03/06/99
Batch No:	99G1798	Prep. No:	1 of 1	Anal. Time:	03:27
Data File Name:	2139.015	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	87
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-16	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-S-2**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/02/99	Anal. Date:	03/03/99
Batch No:	99G1750	Prep. No:	1 of 1	Anal. Time:	07:28
Data File Name:	2139.016	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	54	<54	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	54	<54	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	54	<54	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	54	<54	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	27	<27	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	27	8	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	78
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-17	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/05/99	Anal. Date:	03/06/99
Batch No:	99G1798	Prep. No:	1 of 1	Anal. Time:	03:51
Data File Name:	2139.017	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	90
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

7855

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6
99SY-AD5a-W-13.5
99SY-AD5c-S-6
99SY-AD5c-W-13.5
99SY-AD5f-S-6
99SY-AD5f-W-13.5
99SY-AD5f-S-6MS
99SY-AD5f-S-6MSD
99SY-AD5f-W-13.5MS
99SY-AD5f-W-13.5MSD

Introduction

This data review covers 5 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 and samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

E

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-1	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-S-6**	Sample Matrix	Soil	Moisture %:	21.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	–	Anal. Time:	20:35
Data File Name:	2139.101	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.3	<1.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

7959

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-2	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	-	Anal. Time:	14:16
Data File Name:	2139.002	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

7961

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-3	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-S-6**	Sample Matrix	Soil	Moisture %:	13.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	–	Anal. Time:	20:57
Data File Name:	2139.103	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1699

7963

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/199
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-4	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	-	Anal. Time:	14:41
Data File Name:	2139.004	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

7965

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-5	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-S-6**	Sample Matrix	Soil	Moisture %:	16.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/02/99	Anal. Date:	03/02/99
Batch No:	99G1729	Prep. No:	-	Anal. Time:	21:19
Data File Name:	2139.005	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/99

7967

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-6	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/03/99	Anal. Date:	03/03/99
Batch No:	99G1745	Prep. No:	-	Anal. Time:	15:07
Data File Name:	2139.006	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

7969

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6
99SY-AD5a-W-13.5
99SY-AD5c-S-6
99SY-AD5c-W-13.5
99SY-AD5f-S-6
99SY-AD5f-W-13.5
99SY-MI6a-S-5
99SY-MI6a-W-11.2
99SY-MI6b-S-5
99SY-MI6b-W-12.1
99SY-PT3b-S-2
99SY-PT3b-W-8.5
99SY-PT3c-S-2
99SY-PT3c-W-12
99SY-PT3d-S-2
99SY-PT3d-W-12
99SY-AD5f-S-6MS
99SY-AD5f-S-6MSD
99SY-AD5f-W-13.5MS
99SY-AD5f-W-13.5MSD

Introduction

This data review covers 10 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 and samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-AD5c-S-6	99SY-AD5f-S-6			
TPH as diesel	1	3	100 (≤35)	J	A
TPH as motor oil	4	19	130 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2139

SDG	Sample	Compound	Flag	A or P	Reason
99-2139	99SY-AD5c-S-6 99SY-AD5f-S-6	TPH as diesel TPH as motor oil	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-1	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-S-6**	Sample Matrix	Soil	Moisture %:	21.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	05:45
Data File Name:	2139.001	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	13	[redacted]	
2	Motor oil		mg/kg	13		

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	123
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8049

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-2	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	06:39
Data File Name:	2139.002	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	119
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8051

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-3	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-S-6**	Sample Matrix	Soil	Moisture %:	13.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	06:10
Data File Name:	2139.003	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	1	J
2	Motor oil		mg/kg	11	4	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	94
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8053

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-4	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-W-13.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	07:06
Data File Name:	2139.004	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	131
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/19/99

8055

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-5	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-S-6**	Sample Matrix	Soil	Moisture %:	16.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	06:35
Data File Name:	2139.005	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	3	J
2	Motor oil		mg/kg	12	19	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	93
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8057

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-6	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-W-13.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	07:32
Data File Name:	2139.006	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

8059

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-8	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-S-5**	Sample Matrix	Soil	Moisture %:	7.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	07:00
Data File Name:	2139.008	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	[redacted]	
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

8061

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-9	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-W-11.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	07:58
Data File Name:	2139.009	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.5	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8063

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-10	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-S-5**	Sample Matrix	Soil	Moisture %:	9.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	07:25
Data File Name:	2139.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-11	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-W-12.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	08:25
Data File Name:	2139.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-12	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-S-2**	Sample Matrix	Soil	Moisture %:	10.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	07:50
Data File Name:	2139.012	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8069

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-13	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-W-8.5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	08:51
Data File Name:	2139.013	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-14	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-S-2**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	08:15
Data File Name:	2139.014	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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8073

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-15	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	09:17
Data File Name:	2139.015	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	117
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8075

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-16	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-S-2**	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/04/99
Batch No:	99G1755	Prep. No:	1 of 1	Anal. Time:	08:40
Data File Name:	2139.016	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	2	J
2	Motor oil		mg/kg	11	3	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	111
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/4/99

8077

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-17	Received Date:	03/01/1999
Sample ID:	**99SY-PT3D-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/03/99	Anal. Date:	03/05/99
Batch No:	99G1758	Prep. No:	1 of 1	Anal. Time:	09:44
Data File Name:	2139.017	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

8079

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6	99SY-AD5f-W-13.5MSD
99SY-AD5a-W-13.5	99SY-AD5f-W-13.5DUP
99SY-AD5c-S-6	
99SY-AD5c-W-13.5	
99SY-AD5f-S-6	
99SY-AD5f-W-13.5	
99SY-MI6a-S-5	
99SY-MI6a-W-11.2	
99SY-MI6b-S-5	
99SY-MI6b-W-12.1	
99SY-PT3b-S-2	
99SY-PT3b-W-8.5	
99SY-PT3c-S-2	
99SY-PT3c-W-12	
99SY-PT3d-S-2	
99SY-PT3d-W-12	
99SY-AD5f-S-6MS	
99SY-AD5f-S-6MSD	
99SY-AD5f-S-6DUP	
99SY-AD5f-W-13.5MS	

Introduction

This data review covers 11 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Beryllium Chromium Nickel	0.0059 mg/Kg 0.064 mg/Kg 0.029 mg/Kg	All soil samples in SDG 99-2139
ICB/CCB	Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Selenium Silver Thallium Vanadium Zinc Molybdenum	4.8 ug/L 0.4 ug/L 0.7 ug/L 2.6 ug/L 1.1 ug/L 5.3 ug/L 1.9 ug/L 2.1 ug/L 0.6 ug/L 2.0 ug/L 1.4 ug/L 0.9 ug/L 1.7 ug/L	All soil samples in SDG 99-2139
PB (prep blank)	Beryllium Chromium Nickel	0.094 ug/L 1.6 ug/L 0.52 ug/L	All water samples in SDG 99-2139

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Silver Thallium Vanadium Zinc Molybdenum	1.3 ug/L 1.7 ug/L 4.0 ug/L 0.4 ug/L 0.7 ug/L 2.2 ug/L 1.1 ug/L 2.7 ug/L 1.0 ug/L 1.5 ug/L 0.8 ug/L 1.4 ug/L 1.2 ug/L 0.9 ug/L 1.7 ug/L	All water samples in SDG 99-2139

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-AD5a-S-6	Cadmium Selenium	0.12 mg/Kg 0.18 mg/Kg	0.12U mg/Kg 0.18U mg/Kg
99SY-AD5c-S-6	Cadmium Selenium	0.083 mg/Kg 0.17 mg/Kg	0.083U mg/Kg 0.17U mg/Kg
99SY-AD5f-S-6	Cadmium	0.089 mg/Kg	0.089U mg/Kg
99SY-MI6a-S-5	Cadmium	0.030 mg/Kg	0.030U mg/Kg
99SY-MI6b-S-5	Cadmium	0.057 mg/Kg	0.057U mg/Kg
99SY-PT3b-S-2	Selenium	0.38 mg/Kg	0.38U mg/Kg
99SY-PT3c-S-2	Cadmium Selenium	0.081 mg/Kg 0.43 mg/Kg	0.081U mg/Kg 0.43U mg/Kg
99SY-PT3d-S-2	Cadmium	0.042 mg/Kg	0.042U mg/Kg
99SY-AD5a-W-13.5	Beryllium Cadmium Copper	0.14 ug/L 0.27 ug/L 1.2 ug/L	0.14U ug/L 0.27U ug/L 1.2U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-AD5c-W-13.5	Beryllium Cadmium Nickel Molybdenum	0.091 ug/L 0.25 ug/L 0.44 ug/L 2.6 ug/L	0.091U ug/L 0.25U ug/L 0.44U ug/L 2.6U ug/L
99SY-AD5f-W-13.5	Antimony Beryllium Nickel Molybdenum	1.3 ug/L 0.14 ug/L 0.89 ug/L 4.7 ug/L	1.3U ug/L 0.14U ug/L 0.89U ug/L 4.7U ug/L
99SY-MI6a-W-11.2	Beryllium Vanadium Molybdenum	0.13 ug/L 0.52 ug/L 6.8 ug/L	0.13U ug/L 0.52U ug/L 6.8U ug/L
99SY-MI6b-W-12.1	Beryllium Molybdenum	0.10 ug/L 5.3 ug/L	0.10U ug/L 5.3U ug/L
99SY-PT3b-W-8.5	Beryllium Molybdenum	0.087 ug/L 5.8 ug/L	0.087U ug/L 5.8U ug/L
99SY-PT3c-W-12	Beryllium Molybdenum	0.13 ug/L 5.6 ug/L	0.13U ug/L 5.6U ug/L
99SY-PT3d-W-12	Beryllium Molybdenum	0.12 ug/L 6.0 ug/L	0.12U ug/L 6.0U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-AD5f-W-13.5MS/MSD (All water samples in SDG 99-2139)	Barium	71 (75-125)	71 (75-125)	-	J	A
	Chromium	74 (75-125)	73 (75-125)	-	J	
	Cobalt	70 (75-125)	69 (75-125)	-	J	
	Lead	66 (75-125)	66 (75-125)	-	J	
	Molybdenum	72 (75-125)	71 (75-125)	-	J	
	Nickel	71 (75-125)	71 (75-125)	-	J	
	Thallium	63 (75-125)	62 (75-125)	-	J	
99SY-AD5f-S-6MS/MSD (All soil samples in SDG 99-2139)	Barium	56 (75-125)	60 (75-125)	-	J	A
	Chromium	127 (75-125)	-	-	J (all detects)	

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 and samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 were identified as field duplicates. No metals were detected in any of

the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-AD5c-S-6	99SY-AD5f-S-6			
Antimony	0.29	0.52	57 (≤35)	J	A
Arsenic	2.6	3.2	21 (≤35)	-	-
Barium	75.6	267	112 (≤35)	J	A
Cadmium	0.083	0.089	7 (≤35)	-	-
Chromium	13.1	51.2	119 (≤35)	J	A
Cobalt	7.0	13.5	63 (≤35)	J	A
Copper	11.6	26.4	78 (≤35)	J	A
Lead	3.3	4.9	39 (≤35)	J	A
Mercury	0.026	0.028U	200 (≤35)	J	A
Nickel	11.2	50.8	128 (≤35)	J	A
Selenium	0.17	1.1	146 (≤35)	J	A
Vanadium	24.7	38.6	44 (≤35)	J	A
Zinc	33.8	43.8	26 (≤35)	-	-
Molybdenum	0.028U	0.65	200 (≤35)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-AD5c-W-13.5	99SY-AD5f-W-13.5			
Antimony	1.2U	1.3	200 (≤20)	J	A
Barium	77.9	89.0	13 (≤20)	-	-
Beryllium	0.091	0.14	42 (≤20)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-AD5c-W-13.5	99SY-AD5f-W-13.5			
Cadmium	0.25	0.25U	200 (≤20)	J	A
Nickel	0.44	0.89	68 (≤20)	J	A
Selenium	6.0	7.7	25 (≤20)	J	A
Molybdenum	2.6	4.7	58 (≤20)	J	A

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2139

SDG	Sample	Analyte	Flag	A or P	Reason
99-2139	99SY-AD5a-W-13.5 99SY-AD5c-W-13.5 99SY-AD5f-W-13.5 99SY-MI6a-W-11.2 99SY-MI6b-W-12.1 99SY-PT3b-W-8.5 99SY-PT3c-W-12 99SY-PT3d-W-12	Barium Chromium Cobalt Lead Molybdenum Nickel Thallium	J J J J J J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2139	99SY-AD5a-S-6 99SY-AD5c-S-6 99SY-AD5f-S-6 99SY-MI6a-S-5 99SY-MI6b-S-5 99SY-PT3b-S-2 99SY-PT3c-S-2 99SY-PT3d-S-2	Barium Chromium	J J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2139	99SY-AD5c-S-6 99SY-AD5f-S-6	Antimony Barium Chromium Cobalt Copper Lead Mercury Nickel Selenium Vanadium Molybdenum	J J J J J J J J J J J	A	Field duplicates (RPD)
99-2139	99SY-AD5c-W-13.5 99SY-AD5f-W-13.5	Antimony Beryllium Cadmium Nickel Selenium Molybdenum	J J J J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2139

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2139	99SY-AD5a-S-6	Cadmium Selenium	0.12U mg/Kg 0.18U mg/Kg	A
99-2139	99SY-AD5c-S-6	Cadmium Selenium	0.083U mg/Kg 0.17U mg/Kg	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2139	99SY-AD5f-S-6	Cadmium	0.089U mg/Kg	A
99-2139	99SY-MI6a-S-5	Cadmium	0.030U mg/Kg	A
99-2139	99SY-MI6b-S-5	Cadmium	0.057U mg/Kg	A
99-2139	99SY-PT3b-S-2	Selenium	0.38U mg/Kg	A
99-2139	99SY-PT3c-S-2	Cadmium Selenium	0.081U mg/Kg 0.43U mg/Kg	A
99-2139	99SY-PT3d-S-2	Cadmium	0.042U mg/Kg	A
99-2139	99SY-AD5a-W-13.5	Beryllium Cadmium Copper	0.14U ug/L 0.27U ug/L 1.2U ug/L	A
99-2139	99SY-AD5c-W-13.5	Beryllium Cadmium Nickel Molybdenum	0.091U ug/L 0.25U ug/L 0.44U ug/L 2.6U ug/L	A
99-2139	99SY-AD5f-W-13.5	Antimony Beryllium Nickel Molybdenum	1.3U ug/L 0.14U ug/L 0.89U ug/L 4.7U ug/L	A
99-2139	99SY-MI6a-W-11.2	Beryllium Vanadium Molybdenum	0.13U ug/L 0.52U ug/L 6.8U ug/L	A
99-2139	99SY-MI6b-W-12.1	Beryllium Molybdenum	0.10U ug/L 5.3U ug/L	A
99-2139	99SY-PT3b-W-8.5	Beryllium Molybdenum	0.087U ug/L 5.8U ug/L	A
99-2139	99SY-PT3c-W-12	Beryllium Molybdenum	0.13U ug/L 5.6U ug/L	A
99-2139	99SY-PT3d-W-12	Beryllium Molybdenum	0.12U ug/L 6.0U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

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Client Name: CDM Federal Programs Corp.
Project ID: LBNSY Group AOCs
Project No: 6210-014
Service ID: 992139
Lab Sample ID: 99-2139-2
Collection Date: 03/01/1999
Collected by: BB/DB
Received Date: 03/01/1999
Sample ID: **99SY-AD5A-W-13.5**
Sample Matrix Water
Moisture %: -
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	129		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.14	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	0.27	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	1.2	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.4		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.3	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

4

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-4	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-W-13.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 1.2	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	< 1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	77.9		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.091	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	0.25	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	< 0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	< 0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	< 0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	< 0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	< 0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	2.6	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	0.44	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.0	~~B~~	P	J	99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	< 0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	< 0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	< 0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

6

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY Group AOCs
Sample ID: **99SY-AD5F-W-13.5**
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992139
Lab Sample ID: 99-2139-6
Sample Matrix Water

Collection Date: 03/01/1999
Collected by: BB/DB
Received Date: 03/01/1999
Moisture %: –

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	1.3	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	89.0		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.14	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	4.7	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	0.89	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	7.7	~~B~~	P	J	99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

8

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-9	Received Date:	03/01/1999
Sample ID:	**99SY-MI6A-W-11.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	137		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.13	B	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.8		P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.2	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	0.52	B	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/4/99

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Applied P & Ch Laboratory

Metal Analysis Results

10

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-11	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-W-12.1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	149		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.10	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.3		P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	7.4	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-13	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	108		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.087	B	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.8		P	W	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	7.4	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-15	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	124		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.13	~~B~~	P	U	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.6		~~P~~	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.6	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY Group AOCs

Project No: 6210-014
Service ID: 992139
Lab Sample ID: 99-2139-17
Sample Matrix Water

Collection Date: 03/01/1999
Collected by: BB/DB
Received Date: 03/01/1999
Moisture %: –

Sample ID: **99SY-PT3D-W-12**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	µg/L	10	127		P	J	99M1352M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.12	~~B~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1346N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.0		P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	µg/L	5	<0.42	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	µg/L	10	7.9	B	P		99M1352M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1352M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1352M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1352M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-1	Received Date:	03/01/1999
Sample ID:	**99SY-AD5A-S-6**	Sample Matrix	Soil	Moisture %:	21.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.3	< 0.076	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.38	5.1		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.3	163		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.25	< 0.0053	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.25	0.12	~~B~~	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.63	25.0		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.63	15.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.63	19.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.38	5.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.25	0.10	B	CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.25	< 0.030	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.38	20.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.63	0.18	~~B~~	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.63	< 0.020	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	6.3	< 0.089	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.63	46.2		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.63	73.5		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-3	Received Date:	03/01/1999
Sample ID:	**99SY-AD5C-S-6**	Sample Matrix	Soil	Moisture %:	13.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	0.29	B	P	J	99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	2.6		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	75.6		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0048	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.083	~~B~~	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.57	13.1		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.57	7.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.57	11.6		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	3.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.026		CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.028	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	11.2		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.57	0.17	~~B~~	P	UW	99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.57	< 0.018	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.7	< 0.080	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.57	24.7		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.57	33.8		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-5	Received Date:	03/01/1999
Sample ID:	**99SY-AD5F-S-6**	Sample Matrix	Soil	Moisture %:	16.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.0	0.52	B	P	J	99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	3.2		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	267		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	<0.0050	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.089	~~B~~	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.60	51.2		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.60	13.5		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.60	26.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	4.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	<0.028		CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	0.65		P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	50.8		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.60	1.1		P		99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.60	<0.019	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	6.0	<0.084	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.60	38.6		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.60	43.8		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name: CDM Federal Programs Corp.
Project ID: LBNSY Group AOCs

Project No: 6210-014
Service ID: 992139
Lab Sample ID: 99-2139-8
Sample Matrix Soil

Collection Date: 03/01/1999
Collected by: BB/DB
Received Date: 03/01/1999
Moisture %: 7.9

Sample ID: **99SY-MI6A-S-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	0.13	B	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	2.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	32.5		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0046	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.030	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	12.3		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	4.7		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	5.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	7.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	<0.053	U	CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.026	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	7.5		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	<0.11	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.017	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.076	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	28.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	27.0		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/18/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-12	Received Date:	03/01/1999
Sample ID:	**99SY-PT3B-S-2**	Sample Matrix	Soil	Moisture %:	10.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	1.7	B	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	2.7		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	208		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0047	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.35		P		99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	27.7		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	12.8		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	51.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	14.8		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.17	B	CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.027	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	31.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	0.38	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	<0.018	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	<0.078	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	29.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	64.3		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-14	Received Date:	03/01/1999
Sample ID:	**99SY-PT3C-S-2**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	<0.063	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	71.4		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	<0.0044	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.081	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.53	10.4		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.53	6.8		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.53	8.7		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	3.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	<0.020		CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	<0.025	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	10.6		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.53	0.43	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.53	<0.017	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.3	<0.074	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.53	21.7		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.53	28.2		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-16	Received Date:	03/01/1999
Sample ID:	99SY-PT3D-S-2	Sample Matrix	Soil	Moisture %:	7.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	1.6	B	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	1.0		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	39.8		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0046	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.042	B	P	UJ	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	12.6		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	3.8		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	10.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	1.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.026	B	CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.026	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	6.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	0.61		P		99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	< 0.017	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	< 0.076	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	15.6		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	21.7		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/01/1999
Project ID:	LBNSY Group AOCs	Service ID:	992139	Collected by:	BB/DB
		Lab Sample ID:	99-2139-10	Received Date:	03/01/1999
Sample ID:	**99SY-MI6B-S-5**	Sample Matrix	Soil	Moisture %:	9.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	< 0.066	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	3.5		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	81.0		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0046	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.057	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	17.0		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	8.3		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	9.7		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	3.1		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	< 0.054	U	CV		99M1347N	03/03/99	03/03/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.026	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	12.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	< 0.11	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	< 0.018	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	< 0.077	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	29.2		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	38.5		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 1, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2139

Sample Identification

99SY-AD5a-S-6
99SY-AD5a-W-13.5
99SY-AD5c-S-6
99SY-AD5c-W-13.5
99SY-AD5f-S-6
99SY-AD5f-W-13.5
99SY-MI6a-S-5
99SY-MI6b-S-5
99SY-PT3b-S-2
99SY-PT3c-S-2
99SY-PT3d-S-2
99SY-AD5c-W-13.5DUP

Introduction

This data review covers 8 soil samples and 4 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 99-2139	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-AD5c-S-6 and 99SY-AD5f-S-6 and samples 99SY-AD5c-W-13.5 and 99SY-AD5f-W-13.5 were identified as field duplicates. The results are listed as follows:

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-AD5c-S-6	99SY-AD5f-S-6			
pH	9.04	8.62	5 (≤35)	-	-

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-AD5c-W-13.5	99SY-AD5f-W-13.5			
pH	7.37	7.29	1 (≤20)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2139

SDG	Sample	Analyte	Flag	A or P	Reason
99-2139	99SY-AD5a-S-6 99SY-AD5c-S-6 99SY-AD5f-S-6 99SY-MI6a-S-5 99SY-MI6b-S-5 99SY-PT3b-S-2 99SY-PT3c-S-2 99SY-PT3d-S-2	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2139

No Sample Data Qualified in this SDG

E

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9040
Project ID: LBNSY Group AOCs Service ID: 992139 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2139-1	99SY-AD5A-S-6	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	8.45	
99-2139-2	99SY-AD5A-W-13.5	Water	03/01/99	03/01/99	03/01/99	99W2172	pH unit	0.01	7.41	
99-2139-3	99SY-AD5C-S-6	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	9.04	
99-2139-4	99SY-AD5C-W-13.5	Water	03/01/99	03/01/99	03/01/99	99W2172	pH unit	0.01	7.37	
99-2139-5	99SY-AD5F-S-6	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	8.62	
99-2139-6	99SY-AD5F-W-13.5	Water	03/01/99	03/01/99	03/01/99	99W2172	pH unit	0.01	7.29	
99-2139-8	99SY-MI6A-S-5	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	9.12	
99-2139-10	99SY-MI6B-S-5	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	8.99	
99-2139-12	99SY-PT3B-S-2	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	9.12	
99-2139-14	99SY-PT3C-S-2	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	9.03	
99-2139-16	99SY-PT3D-S-2	Soil	03/01/99	03/01/99	03/11/99	99W2443	pH unit	0.01	9.32	
99W2443-MB-01		Soil	03/11/99	03/11/99	03/11/99	99W2443	pH unit	0.01	6.05	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Cooler 1-03-01-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 2

Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3323 Fax #: 619-268-9677

Address: LENEXA KANSAS City: SAN DIEGO State: CA Zip code: 92111

Bill to: 3760 CONVOY STE SIZ 210

Project Name/Code LBNSY Group B NOCs Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard, CA APCL Quotation #

Due Date: ☑ regular ☐ rush: ___ days ___ hours Sampled by: BBoyd, DBjostad

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	VOCs 8260B	TPH-g P&T 8015m	SVOCs 8270C	TPH-d extr. 8015m	Metals 6010	pH 9040/9045	PCBs 8082	Remarks
	99SY-AD5c-S-6	3/1/99	0915	Soil	4°C	2	X	X	X	X	X	X		
	99SY-AD5c-W-13.5		1000	water	HCl	4	X	X						
	99SY-AD5f-S-6		0915	soil	4°C	4	X	X	X	X	X	X		MS/MSD
	99SY-AD5f-W-13.5		1010	Water	HCl	12	X	X						MS/MSD
	99SY-AD5a-S-6		1110	soil	4°C	2	X	X	X	X	X	X		
	99SY-AD5a-W-13.5		1115	water	HCl	4	X	X	X	X	X	X		
	99SY-BT1r-W-9		0945	water	HCl	2	X							
	99SY-MI6a-S-5		1200	Soil	4°C	2	X		X	X	X			
	99SY-MI6a-W-11.2		1205	water	HCl	2	X		X	X	X			
	99SY-MI6b-S-5		1305	soil	4°C	2	X		X	X	X			
	99SY-MI6b-W-12.1		1315	water	HCl	2	X		X	X	X			
	99SY-PT3c-S-2		1430	Soil	4°C	2	X		X	X	X		X	
	99SY-PT3c-W-12		1440	water	HCl	2	X							
	BBoyd DBjostad													

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Pink - Originator

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☑ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☑ Disposal by APCL ☐ Hold for _____ days after receiving date. If not specified, samples will be discarded 45 days after samples are received.

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/1/99 / 1615 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Cooler 18-03-01-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 2 of 2

Client: CDM Federal Programs Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: Lenexa Kansas City: San Diego, State: CA Zip code: 92111

Bill to: 3760 Convoy St., Ste. 210

Project Name/Code: LBNSY ADCs Job #: 6210-014 P.O. #

Project Address: Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: B. Boyd, D. Bjostad

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270B	TPH ext. 8015 mod	Metals 6010	PCBs 8082	Remarks
	995Y-PT3b-S-2	3/1/99	1410	Soil	4°C	2	X	X	X	X	X	
	995Y-PT3b-W-8.5		1415	Water	HCl	2	X					
	995Y-PT3d-S-2		1350	Soil	4°C	2	X	X	X	X	X	
	995Y-PT3d-W-12		1400	Water	HCl	2	X					
	B Boyd											
	D. Bjostad											

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QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [ ] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/1/99 / 1615 Received by Date/Time /

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APCL USE ONLY Service # Note:

Clients und d that all terms described in the proposals, quotations for this project, and/or t eral terms provided in the current APCL price schedules will be followed. APCL s the right to terminate ervice or withhold delivery of any reports, if in APCL's sole discretion the terms c project have been broken.

Cooler 2-03-01-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268-3383 Fax #: 619 268-9677

Address: 3760 Convoy St. Ste 210 City: San Diego State: CA Zip code: 92111

Bill to: LENEXA KANSAS

Project Name/Code LBNSY Group B 10Cs Job #6210-014 P.O. #

Project Address LBNSY, Long Beach CA APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: BBoyd, DBjostad

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Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	SVOCs 8270c	Metals 6010c	TPH ext 8015m	pH 9040	Remarks
	995Y-AD5c-W-13.5	3/1/99	1000	water	metals-HNO3	3	X	X	X	X	~~MS/MSD~~ DUP
	995Y-AD5f-W-13.5	3/1/99	1010	water	metals-HNO3	9	X	X	X	X	MS/MSD

BBoyd D Bjostad

QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☐ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ AFCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

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Cooler 3-03-01-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal Programs Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: Lenexa, Kansas

Project Name/Code LBNSY AOCs Job #6210-019 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: B. Boyd, D. Bjostad

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	VOCs 8260B	SVOCs 8270C	Metals 6010C	PCBs 8082	TPH ext. 8015	Remarks
	~~995Y-PT3d-S-2~~	~~3/1/99~~	~~1350~~	~~soil~~								
	995Y-PT3d-W-12	3/1/99	1400	water		4		X	X	X	X	
	995Y-PT3c-W-12	3/1/99	1440	water		4		X	X	X	X	
	995Y-PT3b-W-8.5	3/1/99	1515	water		4		X	X	X	X	

B. Boyd
D. Bjostad

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/1/99 / 1615 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients und[illegible]d that all terms described in the proposals, quotations for this project, and/or th[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]es the right to terminat[illegible]ervice or withhold delivery of any reports, if in APCL's sole discretion the terms [illegible] project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-BT1s-W-8
99SY-RE3g-W-10
99SY-RE3h-W-10
99SY-S1na-S-5
99SY-S1na-S-10
99SY-S1na-W-10
99SY-S1nb-S-5
99SY-S1nb-S-10
99SY-S1nb-W-9.4
99SY-S1nc-S-5
99SY-S1nc-S-10
99SY-S1nc-W-10
99SY-S1nd-S-5
99SY-S1nd-S-5RE
99SY-S1nd-S-10
99SY-S1nd-W-9.6
99SY-S1ne-S-5
99SY-S1ne-W-9.6
99SY-S1na-S-5MS
99SY-S1na-S-5MSD

Introduction

This data review covers 12 soil samples and 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/8/99	n-Butylbenzene Naphthalene	26.3 32.4	99SY-S1nb-S-10 99SY-S1nc-S-5 99SY-S1nc-S-10 99SY-S1nd-S-5 99SY-S1na-S-5MS 99SY-S1na-S-5MSD 99G1844-MB-01	J	A
3/11/99	n-Butylbenzene	25.8	99SY-BT1s-W-8 99G1900-MB-01	J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BF1c-W-10 was identified as a field blank. No volatile contaminants were found in this blank.

Samples 99SY-RE3g-W-10 and 99SY-RE3h-W-10 were identified as equipment rinsates. No volatile contaminants were found in these blanks.

Sample 99SY-BT1s-W-8 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-BT1s-W-8	3/2/99	Chloroform	11 ug/L	99SY-BF1c-W-10 99SY-RE3g-W-10 99SY-RE3h-W-10 99SY-S1na-S-5 99SY-S1na-S-10 99SY-S1na-W-10 99SY-S1nb-S-5 99SY-S1nb-S-10 99SY-S1nb-W-9.4 99SY-S1nc-S-5 99SY-S1nc-S-10 99SY-S1nc-W-10 99SY-S1nd-S-5 99SY-S1nd-S-5RE 99SY-S1nd-S-10 99SY-S1nd-W-9.6 99SY-S1ne-S-5 99SY-S1ne-W-9.6

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99G1900-MB-01	1,2-Dichloroethane-d4	73 (81-119)	All TCL compounds	J	P
99SY-S1nd-S-5	1,2-Dichloroethane-d4	69 (75-129)	All TCL compounds	J	A

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99SY-S1nd-S-5RE	Toluene-d8	75 (80-119)	All TCL compounds	J	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
99SY-BF1c-W-10 99SY-BT1s-W-8 99SY-RE3g-W-10 99SY-RE3h-W-10 99SY-S1na-S-5 99SY-S1na-S-10 99SY-S1na-W-10 99SY-S1nb-S-5 99SY-S1nb-W-9.4 99SY-S1nc-W-10 99SY-S1nd-S-5RE 99SY-S1nd-S-10 99SY-S1nd-W-9.6 99SY-S1ne-S-5 99SY-S1ne-W-9.6	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
99SY-S1nd-S-5RE	All TCL compounds	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-S1nd-S-5 and 99SY-S1ne-S-5, samples 99SY-S1nd-W-9.6 and 99SY-S1ne-W-9.6, samples 99SY-S1nd-S-5RE and 99SY-S1ne-S-5 were identified as field duplicates. No volatiles were detected in any of the samples.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Flag	A or P	Reason
99-2178	99SY-S1nb-S-10 99SY-S1nc-S-5 99SY-S1nc-S-10 99SY-S1nd-S-5	n-Butylbenzene Naphthalene	J	A	Continuing calibration (%D)
99-2178	99SY-BT1s-W-8	n-Butylbenzene	J	A	Continuing calibration (%D)
99-2178	99SY-S1nd-S-5 99SY-S1nd-S-5RE	All TCL compounds	J	A	Surrogate spikes (%R)
99-2178	99SY-BF1c-W-10 99SY-BT1s-W-8 99SY-RE3g-W-10 99SY-RE3h-W-10 99SY-S1na-S-5 99SY-S1na-S-10 99SY-S1na-W-10 99SY-S1nb-S-5 99SY-S1nb-W-9.4 99SY-S1nc-W-10 99SY-S1nd-S-5RE 99SY-S1nd-S-10 99SY-S1nd-W-9.6 99SY-S1ne-S-5 99SY-S1ne-W-9.6	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
99-2178	99SY-S1nd-S-5RE	All TCL compounds	R	A	Overall assessment of data

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	05:37
Data File Name:	2178-01	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

8724

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	119
4	Toluene-d8	2037-26-5	81-118	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	127
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-2	Received Date:	03/02/1999
Sample ID:	**99SY-BT1S-W-8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/12/99	Anal. Date:	03/12/99
Batch No:	99G1900	Prep. No:	–	Anal. Time:	03:05
Data File Name:	2178-02A	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	11	
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	93
2	Dibromofluoromethane	1868-53-7	79-120	100
3	1,2-Dichloroethane-d4	17060-07-0	81-119	92
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	66
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	64
3	Fluorobenzene	462-06-6	50-200	58
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	06:52
Data File Name:	2178-11	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	87
2	Dibromofluoromethane	1868-53-7	79-120	89
3	1,2-Dichloroethane-d4	17060-07-0	81-119	101
4	Toluene-d8	2037-26-5	81-118	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	114
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-12	Received Date:	03/02/1999
Sample ID:	**99SY-RE3H-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	07:29
Data File Name:	2178-12	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	86
2	Dibromofluoromethane	1868-53-7	79-120	91
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	109
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-13	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-5**	Sample Matrix	Soil	Moisture %:	7.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	–	Anal. Time:	19:51
Data File Name:	2178-13A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	U
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	86
2	Dibromofluoromethane	1868-53-7	75-124	85
3	1,2-Dichloroethane-d4	17060-07-0	75-129	84
4	Toluene-d8	2037-26-5	80-119	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	123
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-14	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-10**	Sample Matrix	Soil	Moisture %:	17.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	-	Anal. Time:	20:22
Data File Name:	2178-14A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.0	<6.0	U
2	Bromobenzene	108-86-1	µg/kg	6.0	<6.0	U
3	Bromochloromethane	74-97-5	µg/kg	6.0	<6.0	U
4	Bromodichloromethane	75-27-4	µg/kg	6.0	<6.0	U
5	Bromoform	75-25-2	µg/kg	6.0	<6.0	U
6	Bromomethane	74-83-9	µg/kg	6.0	<6.0	U
7	n-Butylbenzene	104-51-8	µg/kg	6.0	<6.0	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.0	<6.0	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.0	<6.0	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.0	<6.0	U
11	Chlorobenzene	108-90-7	µg/kg	6.0	<6.0	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.0	<6.0	U
13	Chloroethane	75-00-3	µg/kg	6.0	<6.0	U
14	Chloroform	67-66-3	µg/kg	6.0	<6.0	U
15	Chloromethane	74-87-3	µg/kg	6.0	<6.0	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.0	<6.0	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.0	<6.0	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	6.0	<6.0	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.0	<6.0	U
20	Dibromomethane	74-95-3	µg/kg	6.0	<6.0	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.0	<6.0	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.0	<6.0	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.0	<6.0	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.0	<6.0	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.0	<6.0	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.0	<6.0	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.0	<6.0	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.0	<6.0	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.0	<6.0	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.0	<6.0	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.0	<6.0	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.0	<6.0	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.0	<6.0	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.0	<6.0	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.0	<6.0	U
36	Ethylbenzene	100-41-4	µg/kg	6.0	<6.0	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.0	<6.0	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.0	<6.0	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.0	<6.0	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.0	<6.0	U
41	Naphthalene	91-20-3	µg/kg	6.0	<6.0	U
42	n-Propylbenzene	103-65-1	µg/kg	6.0	<6.0	U
43	Styrene	100-42-5	µg/kg	6.0	<6.0	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.0	<6.0	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.0	<6.0	U
46	Tetrachloroethene	127-18-4	µg/kg	6.0	<6.0	U
47	Toluene	108-88-3	µg/kg	6.0	<6.0	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.0	<6.0	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.0	<6.0	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.0	<6.0	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.0	<6.0	U
52	Trichloroethene	79-01-6	µg/kg	6.0	<6.0	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.0	<6.0	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.0	<6.0	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.0	<6.0	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.0	<6.0	U
57	Vinyl chloride	75-01-4	µg/kg	6.0	<6.0	U
58	o-Xylene	95-47-6	µg/kg	6.0	<6.0	U
59	m/p-Xylene	108-38-3	µg/kg	6.0	<6.0	U
60	Xylenes (total)	1330-20-7	µg/kg	6.0	<6.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	86
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	95
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	125
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-15	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	08:07
Data File Name:	2178-15	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	86
2	Dibromofluoromethane	1868-53-7	79-120	91
3	1,2-Dichloroethane-d4	17060-07-0	81-119	103
4	Toluene-d8	2037-26-5	81-118	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	107
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
3	Fluorobenzene	462-06-6	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-16	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-5**	Sample Matrix	Soil	Moisture %:	4.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	–	Anal. Time:	20:53
Data File Name:	2178-16A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

8754

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	85
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	95
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	120
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

8755

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-17	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-10**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/08/99	Anal. Date:	03/08/99
Batch No:	99G1844	Prep. No:	–	Anal. Time:	21:48
Data File Name:	2178-17	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	~~U~~ UJ
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	85
2	Dibromofluoromethane	1868-53-7	75-124	83
3	1,2-Dichloroethane-d4	17060-07-0	75-129	75
4	Toluene-d8	2037-26-5	80-119	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	105
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	107
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-18	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-W-9.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	08:44
Data File Name:	2178-18	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	85
2	Dibromofluoromethane	1868-53-7	79-120	97
3	1,2-Dichloroethane-d4	17060-07-0	81-119	96
4	Toluene-d8	2037-26-5	81-118	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	62
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	58
3	Fluorobenzene	462-06-6	50-200	70
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/19/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-19	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/08/99	Anal. Date:	03/08/99
Batch No:	99G1844	Prep. No:	-	Anal. Time:	22:19
Data File Name:	2178-19	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	~~U~~ UJ
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	~~U~~ UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	84
2	Dibromofluoromethane	1868-53-7	75-124	90
3	1,2-Dichloroethane-d4	17060-07-0	75-129	81
4	Toluene-d8	2037-26-5	80-119	96
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	93
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
3	Fluorobenzene	462-06-6	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/14/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-20	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-10**	Sample Matrix	Soil	Moisture %:	11.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/08/99	Anal. Date:	03/08/99
Batch No:	99G1844	Prep. No:	-	Anal. Time:	22:50
Data File Name:	2178-20	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	~~U~~ UJ
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	155	
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	139	
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	4	J
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	4	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	91
3	1,2-Dichloroethane-d4	17060-07-0	75-129	84
4	Toluene-d8	2037-26-5	80-119	80
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	108
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
3	Fluorobenzene	462-06-6	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-21	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	09:21
Data File Name:	2178-21	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	93
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	89
4	Toluene-d8	2037-26-5	81-118	95
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	76
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	71
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-22	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-5**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/08/99	Anal. Date:	03/08/99
Batch No:	99G1844	Prep. No:	–	Anal. Time:	23:20
Data File Name:	2178-22	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U UJ
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U UJ
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U UJ
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U UJ
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	85
2	Dibromofluoromethane	1868-53-7	75-124	84
3	1,2-Dichloroethane-d4	17060-07-0	75-129	69
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	111
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	118
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-22RE	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-5RE**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	-	Anal. Time:	21:54
Data File Name:	2178-22A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U R
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	84
2	Dibromofluoromethane	1868-53-7	75-124	93
3	1,2-Dichloroethane-d4	17060-07-0	75-129	97
4	Toluene-d8	2037-26-5	80-119	75
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	114
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-23	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-10**	Sample Matrix	Soil	Moisture %:	8.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	-	Anal. Time:	22:25
Data File Name:	2178-23A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	83
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	101
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	111
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	85
3	Fluorobenzene	462-06-6	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-24	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-W-9.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	–	Anal. Time:	09:58
Data File Name:	2178-24	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	87
2	Dibromofluoromethane	1868-53-7	79-120	95
3	1,2-Dichloroethane-d4	17060-07-0	81-119	97
4	Toluene-d8	2037-26-5	81-118	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	103
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
3	Fluorobenzene	462-06-6	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-25	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-S-5**	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1877	Prep. No:	-	Anal. Time:	22:56
Data File Name:	2178-25A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	81
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	94
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
3	Fluorobenzene	462-06-6	50-200	91
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-26	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/10/99	Anal. Date:	03/10/99
Batch No:	99G1861	Prep. No:	-	Anal. Time:	10:28
Data File Name:	2178-26	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	<5	U
2	Bromobenzene	108-86-1	µg/L	5	<5	U
3	Bromochloromethane	74-97-5	µg/L	5	<5	U
4	Bromodichloromethane	75-27-4	µg/L	5	<5	U
5	Bromoform	75-25-2	µg/L	5	<5	U
6	Bromomethane	74-83-9	µg/L	5	<5	U
7	n-Butylbenzene	104-51-8	µg/L	5	<5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	<5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	<5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	<5	U
11	Chlorobenzene	108-90-7	µg/L	5	<5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	<5	U
13	Chloroethane	75-00-3	µg/L	5	<5	U
14	Chloroform	67-66-3	µg/L	5	<5	U
15	Chloromethane	74-87-3	µg/L	5	<5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	<5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	<5	U
18	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	5	<5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	<5	U
20	Dibromomethane	74-95-3	µg/L	5	<5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	<5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	<5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	<5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	<5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	<5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	<5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	<5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	<5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	<5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	<5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	<5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	<5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	<5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	<5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	<5	U
36	Ethylbenzene	100-41-4	µg/L	5	<5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	<5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	<5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	<5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	88
2	Dibromofluoromethane	1868-53-7	79-120	94
3	1,2-Dichloroethane-d4	17060-07-0	81-119	96
4	Toluene-d8	2037-26-5	81-118	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	111
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	87
3	Fluorobenzene	462-06-6	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-HI1c-S-4**
99SY-HI1c-S-4RE**
99SY-HI1c-W-23.2**
99SY-RE3g-W-10
99SY-S1na-S-5
99SY-S1na-S-10
99SY-S1na-W-10
99SY-S1nb-S-5
99SY-S1nb-S-10
99SY-S1nb-W-9.4
99SY-S1nc-S-5
99SY-S1nc-S-10**
99SY-S1nc-S-10RE**
99SY-S1nc-W-10
99SY-S1nd-S-5
99SY-S1nd-S-10
99SY-S1nd-S-10RE
99SY-S1nd-W-9.6
99SY-S1ne-S-5
99SY-S1ne-W-9.6

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 13 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/11/99	2,4-Dinitrophenol Pyrene	28.0 26.2	99SY-S1na-S-5	J J	A
3/8/99	2,4-Dinitrophenol	28.6	99G1796-MB-01	J	A
3/8/99	Bis(2-chloroethyl) ether 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	33.4 37.9 25.9	99SY-BF1c-W-10 99SY-HI1c-W-23.2** 99SY-S1na-W-10 99SY-S1nb-W-9.4 99SY-S1nc-W-10	J J J	A

Date	Compound	%D	Associated Samples	Flag	A or P
3/9/99	Benzo(g,h,i)perylene	25.5	99SY-S1nd-W-9.6 99SY-S1ne-W-9.6	J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample 99SY-BF1c-W-10 was identified as a field blank. No semivolatile contaminants were found in this blank.

Sample 99SY-RE3g-W-10 was identified as an equipment rinsate. No semivolatile contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2178	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-S1nd-S-10	Perylene-d12	63852 (132344-529376)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A
99SY-S1nc-S-10**	Chrysene-d12 Perylene-d12	204236 (245600-982402) 62623 (132344-529376)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A
99SY-Hl1c-S-4**	Chrysene-d12 Perylene-d12	167844 (245600-982402) 54794 (132344-529376)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A
99SY-Hl1c-S-4RE**	Chrysene-d12 Perylene-d12	172979 (245600-982402) 53128 (132344-529376)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-S1nc-S-10RE**	Chrysene-d12 Perylene-d12	164651 (245600-982402) 49269 (132344-529376)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A
99SY-S1nd-S-10RE	Chrysene-d12 Perylene-d12	276220 (284167-1136670) 51716 (145915-583660)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

The overall assessment of data was acceptable with the following exceptions:

Sample	Compound	Finding	Flag	A or P
99SY-Hl1c-S-4RE** 99SY-S1nc-S-10RE** 99SY-S1nd-S-10RE	All TCL compounds	For database purposes these compounds were rejected.	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-S1nd-S-5 and 99SY-S1ne-S-5 and samples 99SY-S1nd-W-9.6 and 99SY-S1ne-W-9.6 were identified as field duplicates. No semivolatiles were detected in any of the samples.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Flag	A or P	Reason
99-2178	99SY-S1na-S-5	2,4-Dinitrophenol Pyrene	J J	A	Continuing calibration (%D)
99-2178	99SY-BF1c-W-10 99SY-HI1c-W-23.2** 99SY-S1na-W-10 99SY-S1nb-W-9.4 99SY-S1nc-W-10	Bis(2-chloroethyl) ether 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	J J J	A	Continuing calibration (%D)
99-2178	99SY-S1nd-W-9.6 99SY-S1ne-W-9.6	Benzo(g,h,i)perylene	J	A	Continuing calibration (%D)
99-2178	99SY-BF1c-W-10 99SY-HI1c-W-23.2** 99SY-RE3g-W-10 99SY-S1na-W-10 99SY-S1nb-W-9.4 99SY-S1nc-W-10 99SY-S1nd-W-9.6 99SY-S1ne-W-9.6	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
99-2178	99SY-S1nd-S-10	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	A	Internal standards (area)
99-2178	99SY-S1nc-S-10** 99SY-HI1c-S-4** 99SY-HI1c-S-4RE** 99SY-S1nc-S-10RE** 99SY-S1nd-S-10RE	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J J J J J J J	A	Internal standards (area)
99-2178	99SY-HI1c-S-4RE** 99SY-S1nc-S-10RE** 99SY-S1nd-S-10RE	All TCL compounds	R	A	Overall assessment of data

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Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-9	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-S-4**	Sample Matrix	Soil	Moisture %:	7.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/12/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	02:09
Data File Name:	2178-09	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4300	< 4300	U
2	Acenaphthylene	208-96-8	µg/kg	4300	< 4300	U
3	Anthracene	120-12-7	µg/kg	4300	< 4300	U
4	Benz(a)anthracene	56-55-3	µg/kg	4300	< 4300	~~U~~ UJ
5	Benzo(a)pyrene	50-32-8	µg/kg	4300	< 4300	~~U~~ UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4300	< 4300	~~U~~ UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4300	< 4300	~~U~~ UJ
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4300	< 4300	~~U~~ UJ
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4300	< 4300	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4300	< 4300	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4300	< 4300	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4300	< 4300	~~U~~ UJ
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4300	< 4300	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4300	< 4300	~~U~~ UJ
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	8600	< 8600	U
16	4-Chloroaniline	106-47-8	µg/kg	8600	< 8600	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4300	< 4300	U
18	2-Chlorophenol	95-57-8	µg/kg	4300	< 4300	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4300	< 4300	U
20	Chrysene	218-01-9	µg/kg	4300	< 4300	~~U~~ UJ
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4300	< 4300	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4300	< 4300	~~U~~ UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4300	< 4300	~~U~~ UJ
24	Dibenzofuran	132-64-9	µg/kg	4300	< 4300	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4300	< 4300	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4300	< 4300	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4300	< 4300	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	8600	< 8600	~~U~~ UJ
29	2,4-Dichlorophenol	120-83-2	µg/kg	4300	< 4300	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4300	< 4300	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4300	< 4300	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4300	< 4300	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	22000	< 22000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	22000	< 22000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4300	< 4300	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4300	< 4300	U
37	Fluoranthene	206-44-0	µg/kg	4300	< 4300	U
38	Fluorene	86-73-7	µg/kg	4300	< 4300	U
39	Hexachlorobenzene	118-74-1	µg/kg	4300	< 4300	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4300	< 4300	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4300	<4300	U
42	Hexachloroethane	67-72-1	µg/kg	4300	<4300	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4300	<4300	~~U~~ UJ
44	Isophorone	78-59-1	µg/kg	4300	<4300	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4300	<4300	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4300	<4300	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4300	<4300	U
48	Naphthalene	91-20-3	µg/kg	4300	<4300	U
49	2-Nitroaniline	88-74-4	µg/kg	22000	<22000	U
50	3-Nitroaniline	99-09-2	µg/kg	22000	<22000	U
51	4-Nitroaniline	100-01-6	µg/kg	22000	<22000	U
52	Nitrobenzene	98-95-3	µg/kg	4300	<4300	U
53	2-Nitrophenol	88-75-5	µg/kg	4300	<4300	U
54	4-Nitrophenol	100-02-7	µg/kg	22000	<22000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4300	<4300	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4300	<4300	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	22000	<22000	U
58	Phenanthrene	85-01-8	µg/kg	4300	<4300	U
59	Phenol	108-95-2	µg/kg	4300	<4300	U
60	Pyrene	129-00-0	µg/kg	4300	<4300	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4300	<4300	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4300	<4300	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4300	<4300	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	18
2	2-Fluorophenol	367-12-4	25-103	3
3	Nitrobenzene-d5	4165-60-0	23-119	12
4	Phenol-d5	4165-62-2	24-112	10
5	Terphenyl-d14	1718-51-0	18-136	39
6	2,4,6-Tribromophenol	118-79-6	20-119	9
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	84
2	Chrysene-d12	1719-03-5	50-200	34
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	95
4	Naphthalene-d8	1146-65-2	50-200	88
5	Perylene-d12	1520-96-3	50-200	21
6	Phenanthrene-d10	1517-22-2	50-200	84
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-9RE	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-S-4RE**	Sample Matrix	Soil	Moisture %:	7.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/12/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	04:12
Data File Name:	2178-09A	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	4.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4300	< 4300	U
2	Acenaphthylene	208-96-8	µg/kg	4300	< 4300	U
3	Anthracene	120-12-7	µg/kg	4300	< 4300	U
4	Benz(a)anthracene	56-55-3	µg/kg	4300	< 4300	U
5	Benzo(a)pyrene	50-32-8	µg/kg	4300	< 4300	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4300	< 4300	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4300	< 4300	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4300	< 4300	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4300	< 4300	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4300	< 4300	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4300	< 4300	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4300	< 4300	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4300	< 4300	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4300	< 4300	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	8600	< 8600	U
16	4-Chloroaniline	106-47-8	µg/kg	8600	< 8600	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4300	< 4300	U
18	2-Chlorophenol	95-57-8	µg/kg	4300	< 4300	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4300	< 4300	U
20	Chrysene	218-01-9	µg/kg	4300	< 4300	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4300	< 4300	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4300	< 4300	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4300	< 4300	U
24	Dibenzofuran	132-64-9	µg/kg	4300	< 4300	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4300	< 4300	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4300	< 4300	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4300	< 4300	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	8600	< 8600	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	4300	< 4300	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4300	< 4300	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4300	< 4300	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4300	< 4300	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	22000	< 22000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	22000	< 22000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4300	< 4300	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4300	< 4300	U
37	Fluoranthene	206-44-0	µg/kg	4300	< 4300	U
38	Fluorene	86-73-7	µg/kg	4300	< 4300	U
39	Hexachlorobenzene	118-74-1	µg/kg	4300	< 4300	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4300	< 4300	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4300	<4300	U
42	Hexachloroethane	67-72-1	µg/kg	4300	<4300	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4300	<4300	U
44	Isophorone	78-59-1	µg/kg	4300	<4300	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4300	<4300	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4300	<4300	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4300	<4300	U
48	Naphthalene	91-20-3	µg/kg	4300	<4300	U
49	2-Nitroaniline	88-74-4	µg/kg	22000	<22000	U
50	3-Nitroaniline	99-09-2	µg/kg	22000	<22000	U
51	4-Nitroaniline	100-01-6	µg/kg	22000	<22000	U
52	Nitrobenzene	98-95-3	µg/kg	4300	<4300	U
53	2-Nitrophenol	88-75-5	µg/kg	4300	<4300	U
54	4-Nitrophenol	100-02-7	µg/kg	22000	<22000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4300	<4300	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4300	<4300	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	22000	<22000	U
58	Phenanthrene	85-01-8	µg/kg	4300	<4300	U
59	Phenol	108-95-2	µg/kg	4300	<4300	U
60	Pyrene	129-00-0	µg/kg	4300	<4300	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4300	<4300	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4300	<4300	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4300	<4300	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	20
2	2-Fluorophenol	367-12-4	25-103	8
3	Nitrobenzene-d5	4165-60-0	23-119	15
4	Phenol-d5	4165-62-2	24-112	14
5	Terphenyl-d14	1718-51-0	18-136	48
6	2,4,6-Tribromophenol	118-79-6	20-119	13
# of out-of-control				5

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	113
2	Chrysene-d12	1719-03-5	50-200	35
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	131
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	20
6	Phenanthrene-d10	1517-22-2	50-200	109
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-13	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-5**	Sample Matrix	Soil	Moisture %:	7.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	15:58
Data File Name:	2178-13A	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	74
2	2-Fluorophenol	367-12-4	25-103	70
3	Nitrobenzene-d5	4165-60-0	23-119	81
4	Phenol-d5	4165-62-2	24-112	69
5	Terphenyl-d14	1718-51-0	18-136	114
6	2,4,6-Tribromophenol	118-79-6	20-119	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	75
2	Chrysene-d12	1719-03-5	50-200	50
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	72
4	Naphthalene-d8	1146-65-2	50-200	76
5	Perylene-d12	1520-96-3	50-200	54
6	Phenanthrene-d10	1517-22-2	50-200	76
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9049

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-14	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-10**	Sample Matrix	Soil	Moisture %:	17.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	00:51
Data File Name:	2178-14	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	< 600	U
2	Acenaphthylene	208-96-8	µg/kg	600	< 600	U
3	Anthracene	120-12-7	µg/kg	600	< 600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	< 600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	< 600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	< 600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	< 600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	< 600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	< 600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	< 600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	< 600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	< 600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	< 600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	< 600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	< 600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	< 600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	< 600	U
20	Chrysene	218-01-9	µg/kg	600	< 600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	< 600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	< 600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	< 600	U
24	Dibenzofuran	132-64-9	µg/kg	600	< 600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	< 600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	< 600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	< 600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	< 600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	< 600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	< 600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	< 600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	< 600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	< 600	U
37	Fluoranthene	206-44-0	µg/kg	600	< 600	U
38	Fluorene	86-73-7	µg/kg	600	< 600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	< 600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	< 600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	<600	U
42	Hexachloroethane	67-72-1	µg/kg	600	<600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	<600	U
44	Isophorone	78-59-1	µg/kg	600	<600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	<600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	<600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	<600	U
48	Naphthalene	91-20-3	µg/kg	600	<600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	<3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	<3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	<3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	<600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	<600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	<3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	<600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	<600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	<3000	U
58	Phenanthrene	85-01-8	µg/kg	600	<600	U
59	Phenol	108-95-2	µg/kg	600	<600	U
60	Pyrene	129-00-0	µg/kg	600	<600	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	<600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	<600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	<600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	61
3	Nitrobenzene-d5	4165-60-0	23-119	63
4	Phenol-d5	4165-62-2	24-112	58
5	Terphenyl-d14	1718-51-0	18-136	79
6	2,4,6-Tribromophenol	118-79-6	20-119	56
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	64
2	Chrysene-d12	1719-03-5	50-200	56
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	71
4	Naphthalene-d8	1146-65-2	50-200	81
5	Perylene-d12	1520-96-3	50-200	66
6	Phenanthrene-d10	1517-22-2	50-200	71
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-16	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-5**	Sample Matrix	Soil	Moisture %:	4.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	01:32
Data File Name:	2178-16	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	54
2	2-Fluorophenol	367-12-4	25-103	55
3	Nitrobenzene-d5	4165-60-0	23-119	61
4	Phenol-d5	4165-62-2	24-112	54
5	Terphenyl-d14	1718-51-0	18-136	71
6	2,4,6-Tribromophenol	118-79-6	20-119	48
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	82
2	Chrysene-d12	1719-03-5	50-200	73
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	75
4	Naphthalene-d8	1146-65-2	50-200	84
5	Perylene-d12	1520-96-3	50-200	85
6	Phenanthrene-d10	1517-22-2	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-17	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-10**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	02:14
Data File Name:	2178-17	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a.h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	44
2	2-Fluorophenol	367-12-4	25-103	47
3	Nitrobenzene-d5	4165-60-0	23-119	52
4	Phenol-d5	4165-62-2	24-112	44
5	Terphenyl-d14	1718-51-0	18-136	66
6	2,4,6-Tribromophenol	118-79-6	20-119	45
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	88
2	Chrysene-d12	1719-03-5	50-200	74
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	121
4	Naphthalene-d8	1146-65-2	50-200	125
5	Perylene-d12	1520-96-3	50-200	85
6	Phenanthrene-d10	1517-22-2	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-19	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	02:55
Data File Name:	2178-19	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	45
2	2-Fluorophenol	367-12-4	25-103	43
3	Nitrobenzene-d5	4165-60-0	23-119	50
4	Phenol-d5	4165-62-2	24-112	43
5	Terphenyl-d14	1718-51-0	18-136	64
6	2,4,6-Tribromophenol	118-79-6	20-119	42
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	88
2	Chrysene-d12	1719-03-5	50-200	73
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	100
5	Perylene-d12	1520-96-3	50-200	88
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-20	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-10**	Sample Matrix	Soil	Moisture %:	11.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/12/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	01:28
Data File Name:	2178-20	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4500	< 4500	U
2	Acenaphthylene	208-96-8	µg/kg	4500	< 4500	U
3	Anthracene	120-12-7	µg/kg	4500	< 4500	U
4	Benz(a)anthracene	56-55-3	µg/kg	4500	< 4500	~~U~~ UJ
5	Benzo(a)pyrene	50-32-8	µg/kg	4500	< 4500	~~U~~
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4500	< 4500	~~U~~
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4500	< 4500	~~U~~
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4500	< 4500	~~U~~
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4500	< 4500	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4500	< 4500	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4500	< 4500	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4500	< 4500	~~U~~ UJ
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4500	< 4500	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4500	< 4500	~~U~~ UJ
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	9000	< 9000	U
16	4-Chloroaniline	106-47-8	µg/kg	9000	< 9000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4500	< 4500	U
18	2-Chlorophenol	95-57-8	µg/kg	4500	< 4500	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4500	< 4500	U
20	Chrysene	218-01-9	µg/kg	4500	< 4500	~~U~~ UJ
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4500	< 4500	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4500	< 4500	~~U~~ UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4500	< 4500	~~U~~ UJ
24	Dibenzofuran	132-64-9	µg/kg	4500	< 4500	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4500	< 4500	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4500	< 4500	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4500	< 4500	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	9000	< 9000	~~U~~ UJ
29	2,4-Dichlorophenol	120-83-2	µg/kg	4500	< 4500	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4500	< 4500	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4500	< 4500	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4500	< 4500	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	23000	< 23000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	23000	< 23000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4500	< 4500	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4500	< 4500	U
37	Fluoranthene	206-44-0	µg/kg	4500	< 4500	U
38	Fluorene	86-73-7	µg/kg	4500	< 4500	U
39	Hexachlorobenzene	118-74-1	µg/kg	4500	< 4500	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4500	< 4500	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4500	<4500	U
42	Hexachloroethane	67-72-1	µg/kg	4500	<4500	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4500	<4500	~~U~~ UJ
44	Isophorone	78-59-1	µg/kg	4500	<4500	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4500	<4500	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4500	<4500	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4500	<4500	U
48	Naphthalene	91-20-3	µg/kg	4500	<4500	U
49	2-Nitroaniline	88-74-4	µg/kg	23000	<23000	U
50	3-Nitroaniline	99-09-2	µg/kg	23000	<23000	U
51	4-Nitroaniline	100-01-6	µg/kg	23000	<23000	U
52	Nitrobenzene	98-95-3	µg/kg	4500	<4500	U
53	2-Nitrophenol	88-75-5	µg/kg	4500	<4500	U
54	4-Nitrophenol	100-02-7	µg/kg	23000	<23000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4500	<4500	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4500	<4500	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	23000	<23000	U
58	Phenanthrene	85-01-8	µg/kg	4500	<4500	U
59	Phenol	108-95-2	µg/kg	4500	<4500	U
60	Pyrene	129-00-0	µg/kg	4500	<4500	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4500	<4500	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4500	<4500	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4500	<4500	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	56
2	2-Fluorophenol	367-12-4	25-103	38
3	Nitrobenzene-d5	4165-60-0	23-119	46
4	Phenol-d5	4165-62-2	24-112	39
5	Terphenyl-d14	1718-51-0	18-136	110
6	2,4,6-Tribromophenol	118-79-6	20-119	48
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	102
2	Chrysene-d12	1719-03-5	50-200	42
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	24
6	Phenanthrene-d10	1517-22-2	50-200	99
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-20RE	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-10RE**	Sample Matrix	Soil	Moisture %:	11.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/12/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	04:53
Data File Name:	2178-20A	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4500	< 4500	U
2	Acenaphthylene	208-96-8	µg/kg	4500	< 4500	U
3	Anthracene	120-12-7	µg/kg	4500	< 4500	U
4	Benz(a)anthracene	56-55-3	µg/kg	4500	< 4500	U
5	Benzo(a)pyrene	50-32-8	µg/kg	4500	< 4500	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4500	< 4500	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4500	< 4500	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4500	< 4500	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4500	< 4500	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4500	< 4500	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4500	< 4500	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4500	< 4500	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4500	< 4500	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4500	< 4500	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	9000	< 9000	U
16	4-Chloroaniline	106-47-8	µg/kg	9000	< 9000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4500	< 4500	U
18	2-Chlorophenol	95-57-8	µg/kg	4500	< 4500	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4500	< 4500	U
20	Chrysene	218-01-9	µg/kg	4500	< 4500	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4500	< 4500	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4500	< 4500	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4500	< 4500	U
24	Dibenzofuran	132-64-9	µg/kg	4500	< 4500	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4500	< 4500	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4500	< 4500	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4500	< 4500	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	9000	< 9000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	4500	< 4500	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4500	< 4500	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4500	< 4500	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4500	< 4500	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	23000	< 23000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	23000	< 23000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4500	< 4500	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4500	< 4500	U
37	Fluoranthene	206-44-0	µg/kg	4500	< 4500	U
38	Fluorene	86-73-7	µg/kg	4500	< 4500	U
39	Hexachlorobenzene	118-74-1	µg/kg	4500	< 4500	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4500	< 4500	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4500	<4500	U
42	Hexachloroethane	67-72-1	µg/kg	4500	<4500	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4500	<4500	U
44	Isophorone	78-59-1	µg/kg	4500	<4500	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4500	<4500	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4500	<4500	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4500	<4500	U
48	Naphthalene	91-20-3	µg/kg	4500	<4500	U
49	2-Nitroaniline	88-74-4	µg/kg	23000	<23000	U
50	3-Nitroaniline	99-09-2	µg/kg	23000	<23000	U
51	4-Nitroaniline	100-01-6	µg/kg	23000	<23000	U
52	Nitrobenzene	98-95-3	µg/kg	4500	<4500	U
53	2-Nitrophenol	88-75-5	µg/kg	4500	<4500	U
54	4-Nitrophenol	100-02-7	µg/kg	23000	<23000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4500	<4500	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4500	<4500	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	23000	<23000	U
58	Phenanthrene	85-01-8	µg/kg	4500	<4500	U
59	Phenol	108-95-2	µg/kg	4500	<4500	U
60	Pyrene	129-00-0	µg/kg	4500	<4500	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4500	<4500	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4500	<4500	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4500	<4500	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	54
2	2-Fluorophenol	367-12-4	25-103	21
3	Nitrobenzene-d5	4165-60-0	23-119	46
4	Phenol-d5	4165-62-2	24-112	46
5	Terphenyl-d14	1718-51-0	18-136	142
6	2,4,6-Tribromophenol	118-79-6	20-119	50
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	107
2	Chrysene-d12	1719-03-5	50-200	34
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
4	Naphthalene-d8	1146-65-2	50-200	107
5	Perylene-d12	1520-96-3	50-200	19
6	Phenanthrene-d10	1517-22-2	50-200	106
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-22	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-5**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	19:10
Data File Name:	2178-22A	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	63
2	2-Fluorophenol	367-12-4	25-103	69
3	Nitrobenzene-d5	4165-60-0	23-119	71
4	Phenol-d5	4165-62-2	24-112	65
5	Terphenyl-d14	1718-51-0	18-136	95
6	2,4,6-Tribromophenol	118-79-6	20-119	65
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	89
2	Chrysene-d12	1719-03-5	50-200	57
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	92
5	Perylene-d12	1520-96-3	50-200	61
6	Phenanthrene-d10	1517-22-2	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-23	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-10**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/12/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	00:46
Data File Name:	2178-23	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4400	< 4400	U
2	Acenaphthylene	208-96-8	µg/kg	4400	< 4400	U
3	Anthracene	120-12-7	µg/kg	4400	< 4400	U
4	Benz(a)anthracene	56-55-3	µg/kg	4400	< 4400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	4400	< 4400	UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4400	< 4400	UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4400	< 4400	UJ
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4400	< 4400	UJ
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4400	< 4400	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4400	< 4400	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4400	< 4400	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4400	< 4400	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4400	< 4400	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4400	< 4400	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	8700	< 8700	U
16	4-Chloroaniline	106-47-8	µg/kg	8700	< 8700	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4400	< 4400	U
18	2-Chlorophenol	95-57-8	µg/kg	4400	< 4400	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4400	< 4400	U
20	Chrysene	218-01-9	µg/kg	4400	< 4400	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4400	< 4400	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4400	< 4400	UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4400	< 4400	UJ
24	Dibenzofuran	132-64-9	µg/kg	4400	< 4400	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4400	< 4400	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4400	< 4400	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4400	< 4400	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	8700	< 8700	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	4400	< 4400	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4400	< 4400	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4400	< 4400	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4400	< 4400	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	22000	< 22000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	22000	< 22000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4400	< 4400	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4400	< 4400	U
37	Fluoranthene	206-44-0	µg/kg	4400	< 4400	U
38	Fluorene	86-73-7	µg/kg	4400	< 4400	U
39	Hexachlorobenzene	118-74-1	µg/kg	4400	< 4400	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4400	< 4400	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4400	<4400	U
42	Hexachloroethane	67-72-1	µg/kg	4400	<4400	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4400	<4400	UJ
44	Isophorone	78-59-1	µg/kg	4400	<4400	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4400	<4400	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4400	<4400	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4400	<4400	U
48	Naphthalene	91-20-3	µg/kg	4400	650	J
49	2-Nitroaniline	88-74-4	µg/kg	22000	<22000	U
50	3-Nitroaniline	99-09-2	µg/kg	22000	<22000	U
51	4-Nitroaniline	100-01-6	µg/kg	22000	<22000	U
52	Nitrobenzene	98-95-3	µg/kg	4400	<4400	U
53	2-Nitrophenol	88-75-5	µg/kg	4400	<4400	U
54	4-Nitrophenol	100-02-7	µg/kg	22000	<22000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4400	<4400	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4400	<4400	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	22000	<22000	U
58	Phenanthrene	85-01-8	µg/kg	4400	1800	J
59	Phenol	108-95-2	µg/kg	4400	<4400	U
60	Pyrene	129-00-0	µg/kg	4400	<4400	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4400	<4400	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4400	<4400	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4400	<4400	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	95
2	2-Fluorophenol	367-12-4	25-103	18
3	Nitrobenzene-d5	4165-60-0	23-119	66
4	Phenol-d5	4165-62-2	24-112	56
5	Terphenyl-d14	1718-51-0	18-136	150
6	2,4,6-Tribromophenol	118-79-6	20-119	65
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	113
2	Chrysene-d12	1719-03-5	50-200	59
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	98
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	24
6	Phenanthrene-d10	1517-22-2	50-200	153
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M1699 9124

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-23RE	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-10RE**	Sample Matrix	Soil	Moisture %:	8.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/14/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	22:00
Data File Name:	2178-23B	Sample Amount:	30.0 g	Dilution Factor:	8
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	4400	< 4400	U R
2	Acenaphthylene	208-96-8	µg/kg	4400	< 4400	U
3	Anthracene	120-12-7	µg/kg	4400	< 4400	U
4	Benz(a)anthracene	56-55-3	µg/kg	4400	< 4400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	4400	< 4400	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	4400	< 4400	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	4400	< 4400	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	4400	< 4400	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	4400	< 4400	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	4400	< 4400	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	4400	< 4400	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	4400	< 4400	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	4400	< 4400	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	4400	< 4400	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	8700	< 8700	U
16	4-Chloroaniline	106-47-8	µg/kg	8700	< 8700	U
17	2-Chloronaphthalene	91-58-7	µg/kg	4400	< 4400	U
18	2-Chlorophenol	95-57-8	µg/kg	4400	< 4400	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	4400	< 4400	U
20	Chrysene	218-01-9	µg/kg	4400	1100	J
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	4400	< 4400	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	4400	< 4400	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	4400	< 4400	U
24	Dibenzofuran	132-64-9	µg/kg	4400	< 4400	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	4400	< 4400	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	4400	< 4400	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	4400	< 4400	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	8700	< 8700	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	4400	< 4400	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	4400	< 4400	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	4400	< 4400	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	4400	< 4400	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	22000	< 22000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	22000	< 22000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	4400	< 4400	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	4400	< 4400	U
37	Fluoranthene	206-44-0	µg/kg	4400	< 4400	U
38	Fluorene	86-73-7	µg/kg	4400	930	J
39	Hexachlorobenzene	118-74-1	µg/kg	4400	< 4400	U
40	Hexachlorobutadiene	87-68-3	µg/kg	4400	< 4400	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	4400	<4400	U
42	Hexachloroethane	67-72-1	µg/kg	4400	<4400	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	4400	<4400	U
44	Isophorone	78-59-1	µg/kg	4400	<4400	U
45	2-Methylnaphthalene	91-57-6	µg/kg	4400	5100	
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	4400	<4400	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	4400	<4400	U
48	Naphthalene	91-20-3	µg/kg	4400	710	J
49	2-Nitroaniline	88-74-4	µg/kg	22000	<22000	U
50	3-Nitroaniline	99-09-2	µg/kg	22000	<22000	U
51	4-Nitroaniline	100-01-6	µg/kg	22000	<22000	U
52	Nitrobenzene	98-95-3	µg/kg	4400	<4400	U
53	2-Nitrophenol	88-75-5	µg/kg	4400	<4400	U
54	4-Nitrophenol	100-02-7	µg/kg	22000	<22000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	4400	<4400	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	4400	<4400	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	22000	<22000	U
58	Phenanthrene	85-01-8	µg/kg	4400	2200	J
59	Phenol	108-95-2	µg/kg	4400	<4400	U
60	Pyrene	129-00-0	µg/kg	4400	<4400	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	4400	<4400	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	4400	<4400	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	4400	<4400	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	90
2	2-Fluorophenol	367-12-4	25-103	15
3	Nitrobenzene-d5	4165-60-0	23-119	66
4	Phenol-d5	4165-62-2	24-112	61
5	Terphenyl-d14	1718-51-0	18-136	166
6	2,4,6-Tribromophenol	118-79-6	20-119	69
# of out-of-control				2

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	95
2	Chrysene-d12	1719-03-5	50-200	49
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	77
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	18
6	Phenanthrene-d10	1517-22-2	50-200	113
# of out-of-control				2

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-25	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-S-5**	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	22:38
Data File Name:	2178-25	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	53
2	2-Fluorophenol	367-12-4	25-103	33
3	Nitrobenzene-d5	4165-60-0	23-119	55
4	Phenol-d5	4165-62-2	24-112	47
5	Terphenyl-d14	1718-51-0	18-136	81
6	2,4,6-Tribromophenol	118-79-6	20-119	57
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	76
2	Chrysene-d12	1719-03-5	50-200	51
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	86
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	53
6	Phenanthrene-d10	1517-22-2	50-200	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9182

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/08/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	17:40
Data File Name:	2178-01	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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4/18/99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	83
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	93
4	Phenol-d5	4165-62-2	10- 93	27
5	Terphenyl-d14	1718-51-0	33-140	115
6	2,4,6-Tribromophenol	118-79-6	10-122	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	91
2	Chrysene-d12	1719-03-5	50-200	67
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
4	Naphthalene-d8	1146-65-2	50-200	96
5	Perylene-d12	1520-96-3	50-200	81
6	Phenanthrene-d10	1517-22-2	50-200	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9013

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-10	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-W-23.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/08/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	18:25
Data File Name:	2178-10	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	3	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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MYKG

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	74
2	2-Fluorophenol	367-12-4	21- 99	46
3	Nitrobenzene-d5	4165-60-0	35-113	82
4	Phenol-d5	4165-62-2	10- 93	27
5	Terphenyl-d14	1718-51-0	33-140	101
6	2,4,6-Tribromophenol	118-79-6	10-122	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	87
2	Chrysene-d12	1719-03-5	50-200	65
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
4	Naphthalene-d8	1146-65-2	50-200	92
5	Perylene-d12	1520-96-3	50-200	83
6	Phenanthrene-d10	1517-22-2	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9032

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/14/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	19:12
Data File Name:	2178-11B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	74
2	2-Fluorophenol	367-12-4	21- 99	41
3	Nitrobenzene-d5	4165-60-0	35-113	70
4	Phenol-d5	4165-62-2	10- 93	23
5	Terphenyl-d14	1718-51-0	33-140	119
6	2,4,6-Tribromophenol	118-79-6	10-122	68
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	81
2	Chrysene-d12	1719-03-5	50-200	54
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	82
4	Naphthalene-d8	1146-65-2	50-200	84
5	Perylene-d12	1520-96-3	50-200	69
6	Phenanthrene-d10	1517-22-2	50-200	76
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-15	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/08/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	19:49
Data File Name:	2178-15	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	87
2	2-Fluorophenol	367-12-4	21- 99	60
3	Nitrobenzene-d5	4165-60-0	35-113	95
4	Phenol-d5	4165-62-2	10- 93	42
5	Terphenyl-d14	1718-51-0	33-140	124
6	2,4,6-Tribromophenol	118-79-6	10-122	81
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	96
2	Chrysene-d12	1719-03-5	50-200	69
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
4	Naphthalene-d8	1146-65-2	50-200	98
5	Perylene-d12	1520-96-3	50-200	89
6	Phenanthrene-d10	1517-22-2	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-18	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-W-9.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/08/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	20:31
Data File Name:	2178-18	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	~~U~~ UJ
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	9081

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	80
2	2-Fluorophenol	367-12-4	21- 99	52
3	Nitrobenzene-d5	4165-60-0	35-113	86
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	111
6	2,4,6-Tribromophenol	118-79-6	10-122	73
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	98
2	Chrysene-d12	1719-03-5	50-200	68
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	107
4	Naphthalene-d8	1146-65-2	50-200	105
5	Perylene-d12	1520-96-3	50-200	86
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-21	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/08/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	21:15
Data File Name:	2178-21	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	~~U~~ UJ
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	~~U~~ W
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	~~U~~ W
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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MW1849

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	92
2	2-Fluorophenol	367-12-4	21- 99	60
3	Nitrobenzene-d5	4165-60-0	35-113	98
4	Phenol-d5	4165-62-2	10- 93	41
5	Terphenyl-d14	1718-51-0	33-140	131
6	2,4,6-Tribromophenol	118-79-6	10-122	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	124
2	Chrysene-d12	1719-03-5	50-200	88
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	138
4	Naphthalene-d8	1146-65-2	50-200	132
5	Perylene-d12	1520-96-3	50-200	110
6	Phenanthrene-d10	1517-22-2	50-200	123
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-24	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/09/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	13:12
Data File Name:	2178-24	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	~~U~~ UJ
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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MLK 99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	75
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	85
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	110
6	2,4,6-Tribromophenol	118-79-6	10-122	76
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	95
2	Chrysene-d12	1719-03-5	50-200	73
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	83
4	Naphthalene-d8	1146-65-2	50-200	88
5	Perylene-d12	1520-96-3	50-200	91
6	Phenanthrene-d10	1517-22-2	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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4/18/99

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-26	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-W-9.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/09/99
Batch No:	99G1796	Prep. No:	1 of 1	Anal. Time:	13:54
Data File Name:	2178-26	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	UJ
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	74
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	84
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	111
6	2,4,6-Tribromophenol	118-79-6	10-122	78
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	104
2	Chrysene-d12	1719-03-5	50-200	80
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	97
6	Phenanthrene-d10	1517-22-2	50-200	109
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 16, 1999

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-RE3g-W-10

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample 99SY-BF1c-W-10 was identified as a field blank. No polychlorinated biphenyl contaminants were found in this blank.

Sample 99SY-RE3g-W-10 was identified as an equipment rinsate. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

F

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/05/99	Anal. Date:	03/06/99
Batch No:	99G1798	Prep. No:	1 of 1	Anal. Time:	04:16
Data File Name:	2178.001	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	97
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

W

9456

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/05/99	Anal. Date:	03/06/99
Batch No:	99G1798	Prep. No:	1 of 1	Anal. Time:	04:41
Data File Name:	2178.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	93
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

9459

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-RE3g-W-10
99SY-RE3h-W-10
99SY-S1na-S-5
99SY-S1na-S-10
99SY-S1na-W-10
99SY-S1nb-S-5
99SY-S1nb-S-10**
99SY-S1nb-W-9.4
99SY-S1nc-S-5
99SY-S1nc-S-10
99SY-S1nc-W-10
99SY-S1nd-S-5
99SY-S1nd-S-10**
99SY-S1nd-W-9.6
99SY-S1ne-S-5
99SY-S1ne-W-9.6
99SY-S1nb-S-5MS
99SY-S1nb-S-5MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
99G1793-MB-01	3/5/99	TPH as gasoline	0.04 mg/L	All water samples in SDG 99-2178

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-BF1c-W-10	TPH as gasoline	0.05 mg/L	0.05U mg/L
99SY-RE3g-W-10	TPH as gasoline	0.06 mg/L	0.06U mg/L
99SY-RE3h-W-10	TPH as gasoline	0.11 mg/L	0.11U mg/L

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-S1na-W-10	TPH as gasoline	0.05 mg/L	0.05U mg/L
99SY-S1nb-W-9.4	TPH as gasoline	0.07 mg/L	0.07U mg/L
99SY-S1nc-W-10	TPH as gasoline	0.06 mg/L	0.06U mg/L
99SY-S1nd-W-9.6	TPH as gasoline	0.09 mg/L	0.09U mg/L
99SY-S1ne-W-9.6	TPH as gasoline	0.08 mg/L	0.08U mg/L

Sample 99SY-BF1c-W-10 was identified as a field blank. No total petroleum hydrocarbons as gasoline contaminants were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-BF1c-W-10	3/2/99	TPH as gasoline	0.05 mg/L	99SY-S1na-S-5 99SY-S1na-S-10 99SY-S1na-W-10 99SY-S1nb-S-5 99SY-S1nb-S-10** 99SY-S1nb-W-9.4 99SY-S1nc-S-5 99SY-S1nc-S-10 99SY-S1nc-W-10 99SY-S1nd-S-5 99SY-S1nd-S-10** 99SY-S1nd-W-9.6 99SY-S1ne-S-5 99SY-S1ne-W-9.6

Samples 99SY-RE3g-W-10 and 99SY-RE3h-W-10 were identified as equipment rinsates. No total petroleum hydrocarbons as gasoline contaminants were found in these blanks with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-RE3g-W-10	3/2/99	TPH as gasoline	0.06 mg/L	All soil samples in SDG 99-2178
99SY-RE3h-W-10	3/2/99	TPH as gasoline	0.11 mg/L	99SY-S1na-W-10 99SY-S1nb-W-9.4 99SY-S1nc-W-10 99SY-S1nd-W-9.6 99SY-S1ne-W-9.6

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-S1na-W-10	TPH as gasoline	0.05 mg/L	0.05U mg/L
99SY-S1nb-W-9.4	TPH as gasoline	0.07 mg/L	0.07U mg/L
99SY-S1nc-S-5	TPH as gasoline	0.2 mg/Kg	1U mg/Kg
99SY-S1nc-W-10	TPH as gasoline	0.06 mg/L	0.06U mg/L
99SY-S1nd-S-5	TPH as gasoline	0.1 mg/Kg	1U mg/Kg
99SY-S1nd-W-9.6	TPH as gasoline	0.09 mg/L	0.09U mg/L
99SY-S1ne-W-9.6	TPH as gasoline	0.08 mg/L	0.08U mg/L

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-S1nd-S-5 and 99SY-S1ne-S-5 and samples 99SY-S1nd-W-9.6 and 99SY-S1ne-W-9.6 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-S1nd-S-5	99SY-S1ne-S-5			
TPH as gasoline	0.1	1.1U	200 (≤35)	J	A

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	99SY-S1nd-W-9.6	99SY-S1ne-W-9.6			
TPH as gasoline	0.09	0.08	12 (≤20)	-	-

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Flag	A or P	Reason
99-2178	99SY-S1nd-S-5 99SY-S1ne-S-5	TPH as gasoline	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2178	99SY-BF1c-W-10	TPH as gasoline	0.05U mg/L	A
99-2178	99SY-RE3g-W-10	TPH as gasoline	0.06U mg/L	A
99-2178	99SY-RE3h-W-10	TPH as gasoline	0.11U mg/L	A
99-2178	99SY-S1na-W-10	TPH as gasoline	0.05U mg/L	A
99-2178	99SY-S1nb-W-9.4	TPH as gasoline	0.07U mg/L	A
99-2178	99SY-S1nc-W-10	TPH as gasoline	0.06U mg/L	A
99-2178	99SY-S1nd-W-9.6	TPH as gasoline	0.09U mg/L	A
99-2178	99SY-S1ne-W-9.6	TPH as gasoline	0.08U mg/L	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2178	99SY-S1na-W-10	TPH as gasoline	0.05U mg/L	A
99-2178	99SY-S1nb-W-9.4	TPH as gasoline	0.07U mg/L	A
99-2178	99SY-S1nc-S-5	TPH as gasoline	1U mg/Kg	A

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2178	99SY-S1nc-W-10	TPH as gasoline	0.06U mg/L	A
99-2178	99SY-S1nd-S-5	TPH as gasoline	1U mg/Kg	A
99-2178	99SY-S1nd-W-9.6	TPH as gasoline	0.09U mg/L	A
99-2178	99SY-S1ne-W-9.6	TPH as gasoline	0.08U mg/L	A

F

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1793	Prep. No:	-	Anal. Time:	16:36
Data File Name:	2178.001	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL		Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	U	0.05	

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	95
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1793	Prep. No:	–	Anal. Time:	18:34
Data File Name:	2178.011	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.06	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	90
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-12	Received Date:	03/02/1999
Sample ID:	**99SY-RE3H-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1793	Prep. No:	-	Anal. Time:	18:57
Data File Name:	2178.012	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.11	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	77
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-13	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-5**	Sample Matrix	Soil	Moisture %:	7.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	–	Anal. Time:	13:10
Data File Name:	2178.013	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	86
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-14	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-10**	Sample Matrix	Soil	Moisture %:	17.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	–	Anal. Time:	13:32
Data File Name:	2178.014	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-15	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1793	Prep. No:	-	Anal. Time:	19:21
Data File Name:	2178.015	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.05	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	81
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-16	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-5**	Sample Matrix	Soil	Moisture %:	4.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1780	Prep. No:	-	Anal. Time:	17:58
Data File Name:	2178.016	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	<1.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/19/99

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-17	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-10**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1780	Prep. No:	–	Anal. Time:	17:36
Data File Name:	2178.017	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		52-149	96	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/99

9686

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-18	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-W-9.4**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/06/99	Anal. Date:	03/06/99
Batch No:	99G1793	Prep. No:	–	Anal. Time:	01:33
Data File Name:	2178.118	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.07	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	88
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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9683

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-19	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	–	Anal. Time:	14:39
Data File Name:	2178.019	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	0.2 [a]	J

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	89
# of out-of-control			0

[a] Not a typical gas pattern. Most of the peaks in the chromatogram correspond to the heavier portionof the chain.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-20	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-10**	Sample Matrix	Soil	Moisture %:	11.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	–	Anal. Time:	15:45
Data File Name:	2178.020	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	80
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-21	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/06/99	Anal. Date:	03/06/99
Batch No:	99G1793	Prep. No:	–	Anal. Time:	02:32
Data File Name:	2178.021	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.06	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	97
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-22	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-5**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	-	Anal. Time:	16:08
Data File Name:	2178.022	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	0.1 [a]	J | UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	80
# of out-of-control				0

[a] Not a typical gas pattern. Most of the peaks in the chromatogram correspond to the heavier portionof the chain.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-23	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-10**	Sample Matrix	Soil	Moisture %:	8.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1778	Prep. No:	-	Anal. Time:	18:57
Data File Name:	2178.023	Sample Amount:	4.0 g	Dilution Factor:	100
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	110	200 [a]	

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	105
# of out-of-control			0

[a] Not a typical gas pattern. Most of the peaks in the chromatogram correspond to the heavier portionof the chain.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-24	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/06/99	Anal. Date:	03/06/99
Batch No:	99G1793	Prep. No:	-	Anal. Time:	02:08
Data File Name:	2178.124	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.09	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	78
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-25	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-S-5**	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/04/99	Anal. Date:	03/04/99
Batch No:	99G1770	Prep. No:	–	Anal. Time:	16:30
Data File Name:	2178.025	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	< 1.1	U UJ

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	88
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

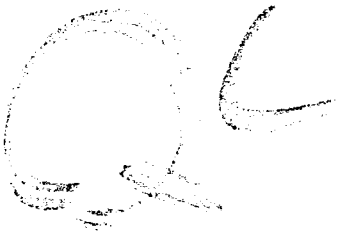
Organic Analysis Results for Method M8015V

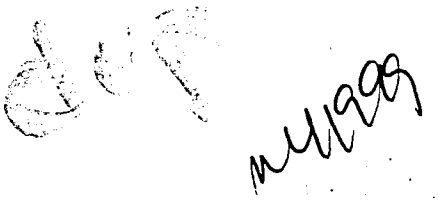
Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-26	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-W-9.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/05/99	Anal. Date:	03/05/99
Batch No:	99G1793	Prep. No:	–	Anal. Time:	20:59
Data File Name:	2178.026	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.08	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	101
# of out-of-control			0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted





9764

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-HI1c-S-4
99SY-HI1c-W-23.2**
99SY-RE3g-W-10
99SY-S1na-S-5
99SY-S1na-S-10
99SY-S1na-W-10
99SY-S1nb-S-5
99SY-S1nb-S-10**
99SY-S1nb-W-9.4
99SY-S1nc-S-5
99SY-S1nc-S-10
99SY-S1nc-W-10
99SY-S1nd-S-5
99SY-S1nd-S-10**
99SY-S1nd-W-9.6
99SY-S1ne-S-5
99SY-S1ne-W-9.6

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Sample 99SY-BF1c-W-10 was identified as a field blank. No total petroleum hydrocarbons as extractable contaminants were found in this blank with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-BF1c-W-10	3/2/99	TPH as diesel	0.02 mg/L	All samples in SDG 99-2178

Sample 99SY-RE3g-W-10 was identified as an equipment rinsate. No total petroleum hydrocarbons as extractable contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-RE3g-W-10	3/2/99	TPH as diesel	0.03 mg/L	All soil samples in SDG 99-2178

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the

following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-Hl1c-W-23.2**	TPH as diesel	0.05 mg/L	0.5U mg/L
99SY-S1na-W-10	TPH as diesel	0.1 mg/L	0.5U mg/L
99SY-S1ne-W-9.6	TPH as diesel	0.02 mg/L	0.5U mg/L

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2178	TPH as extractables	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-S1nd-W-9.6 and 99SY-S1ne-W-9.6 and samples 99SY-S1nd-S-5 and 99SY-S1ne-S-5 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	99SY-S1nd-W-9.6	99SY-S1ne-W-9.6			
TPH as diesel	0.2	0.02	164 (≤20)	J	A
TPH as motor oil	0.05	0.1	67 (≤20)	J	A

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-S1nd-S-5	99SY-S1ne-S-5			
TPH as motor oil	1	10	198 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2178

SDG	Sample	Compound	Flag	A or P	Reason
99-2178	99SY-BF1c-W-10 99SY-HI1c-W-23.2** 99SY-RE3g-W-10 99SY-S1na-W-10 99SY-S1nb-W-9.4 99SY-S1nc-W-10 99SY-S1nd-W-9.6 99SY-S1ne-W-9.6	TPH as extractables	None	P	Matrix spike/Matrix spike duplicates
99-2178	99SY-S1nd-W-9.6 99SY-S1ne-W-9.6	TPH as diesel TPH as motor oil	J J	A	Field duplicates (RPD)
99-2178	99SY-S1nd-S-5 99SY-S1ne-S-5	TPH as motor oil	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

F

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	12:20
Data File Name:	2178.001	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.02	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	76
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-9	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-S-4**	Sample Matrix	Soil	Moisture %:	7.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	16:36
Data File Name:	2178.109	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	8	J
2	Motor oil		mg/kg	11	180	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	75
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-10	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-W-23.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	12:46
Data File Name:	2178.010	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.05	J
2	Motor oil		mg/L	0.5	0.03	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	111
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/4/1999

9827

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	13:11
Data File Name:	2178.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.03	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-13	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-5**	Sample Matrix	Soil	Moisture %:	7.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	05:31
Data File Name:	2178.013	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	8	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w41999

9831

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Serv[illegible] ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-14	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-S-10**	Sample Matrix	Soil	Moisture %:	17.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	05:56
Data File Name:	2178.014	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	7	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

9836

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-15	Received Date:	03/02/1999
Sample ID:	**99SY-S1NA-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	13:36
Data File Name:	2178.015	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.1	J
2	Motor oil		mg/L	0.5	0.03	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	113
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a/1/99

9835

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-16	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-5**	Sample Matrix	Soil	Moisture %:	4.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	06:21
Data File Name:	2178.016	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	9	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-17	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-S-10**	Sample Matrix	Soil	Moisture %:	10.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	06:46
Data File Name:	2178.017	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	31	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-18	Received Date:	03/02/1999
Sample ID:	**99SY-S1NB-W-9.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	14:01
Data File Name:	2178.018	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	0.06	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	111
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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9841

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-19	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-5**	Sample Matrix	Soil	Moisture %:	3.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	08:00
Data File Name:	2178.019	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	7	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	113
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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9843

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-20	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-S-10**	Sample Matrix	Soil	Moisture %:	11.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	14:20
Data File Name:	2178.020	Sample Amount:	20.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	110	200	
2	Motor oil		mg/kg	110	1300	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	709
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-21	Received Date:	03/02/1999
Sample ID:	**99SY-S1NC-W-10**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	14:27
Data File Name:	2178.021	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

W4999

9847

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-22	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-5**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	08:25
Data File Name:	2178.022	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	1	J

Surrogates		Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28} 630-02-4	50-149	110
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-23	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-S-10**	Sample Matrix	Soil	Moisture %:	8.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	15:20
Data File Name:	2178.023	Sample Amount:	20.0 g	Dilution Factor:	100
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	1100	5600	
2	Motor oil		mg/kg	1100	7000	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-149	5130	
# of out-of-control					1	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-24	Received Date:	03/02/1999
Sample ID:	**99SY-S1ND-W-9.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	14:52
Data File Name:	2178.024	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	0.05	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	106
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-25	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-S-5**	Sample Matrix	Soil	Moisture %:	5.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	17:02
Data File Name:	2178.125	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	170	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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9855

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-26	Received Date:	03/02/1999
Sample ID:	**99SY-S1NE-W-9.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/04/99	Anal. Date:	03/05/99
Batch No:	99G1776	Prep. No:	1 of 1	Anal. Time:	16:08
Data File Name:	2178.026	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.02	J
2	Motor oil		mg/L	0.5	0.1	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	109
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

9857

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 7, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-A12a-S-3**
99SY-A12a-W-21.4
99SY-A12b-S-3
99SY-A12b-W-20.9**
99SY-A12c-S-3
99SY-A12c-W-21.2
99SY-HI1c-S-4
99SY-HI1c-W-23.2
99SY-RE3g-W-10
99SY-BF1c-W-10MS
99SY-BF1c-W-10MSD
99SY-BF1c-W-10DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 4 soil samples and 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Beryllium Chromium Nickel	0.0059 mg/Kg 0.064 mg/Kg 0.029 mg/Kg	All soil samples in SDG 99-2178
ICB/CCB	Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Selenium Silver Thallium Vanadium Zinc Molybdenum	4.8 ug/L 0.4 ug/L 0.7 ug/L 2.6 ug/L 1.1 ug/L 5.3 ug/L 1.9 ug/L 2.1 ug/L 0.6 ug/L 2.0 ug/L 1.4 ug/L 0.9 ug/L 1.7 ug/L	All soil samples in SDG 99-2178
PB (prep blank)	Copper	1.7 ug/L	All water samples in SDG 99-2178
ICB/CCB	Arsenic Cadmium Cobalt Copper Lead Selenium Thallium Molybdenum	1.5 ug/L 0.2 ug/L 0.3 ug/L 2.4 ug/L 1.8 ug/L 3.6 ug/L 4.4 ug/L 1.0 ug/L	All water samples in SDG 99-2178

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs.

The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI1c-S-4	Cadmium	0.089 mg/Kg	0.089U mg/Kg
99SY-BF1c-W-10	Copper Lead Thallium Molybdenum	4.8 ug/L 1.2 ug/L 2.9 ug/L 0.63 ug/L	4.8U ug/L 1.2U ug/L 2.9U ug/L 0.63U ug/L
99SY-HI1c-W-23.2	Arsenic Copper Selenium Thallium	2.7 ug/L 11.3 ug/L 9.2 ug/L 8.9 ug/L	2.7U ug/L 11.3U ug/L 9.2U ug/L 8.9U ug/L
99SY-RE3g-W-10	Arsenic Cobalt Lead Thallium	1.4 ug/L 0.33 ug/L 1.0 ug/L 2.3 ug/L	1.4U ug/L 0.33U ug/L 1.0U ug/L 2.3U ug/L

Sample 99SY-BF1c-W-10 was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

Field Blank ID	Analyte	Concentration (ug/L)
99SY-BF1c-W-10	Chromium Copper Lead Mercury Molybdenum Silver Thallium Zinc	3.6 4.8 1.2 0.22 0.63 0.91 2.9 4.0

Sample 99SY-RE3g-W-10 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
99SY-RE3g-W-10	Arsenic	1.4
	Chromium	0.60
	Cobalt	0.33
	Copper	2.9
	Lead	1.0
	Mercury	0.11
	Nickel	1.3
	Thallium	2.3
	Zinc	3.5

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2178	Mercury	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-AD5f-S-6MS/MSD (99SY-HI1c-S-4)	Barium	56 (75-125)	60 (75-125)	-	J	A
	Chromium	127 (75-125)	-	-	J (all detects)	

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2178	Mercury	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2178

SDG	Sample	Analyte	Flag	A or P	Reason
99-2178	99SY-BF1c-W-10 99SY-A12a-S-3** 99SY-A12a-W-21.4 99SY-A12b-S-3 99SY-A12b-W-20.9** 99SY-A12c-S-3 99SY-A12c-W-21.2 99SY-HI1c-S-4 99SY-HI1c-W-23.2 99SY-RE3g-W-10	Mercury	None	P	Matrix spike/Matrix spike duplicates
99-2178	99SY-HI1c-S-4	Barium Chromium	J J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2178	99SY-BF1c-W-10 99SY-A12a-S-3** 99SY-A12a-W-21.4 99SY-A12b-S-3 99SY-A12b-W-20.9** 99SY-A12c-S-3 99SY-A12c-W-21.2 99SY-HI1c-S-4 99SY-HI1c-W-23.2 99SY-RE3g-W-10	Mercury	None	P	Duplicate sample analysis

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2178

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2178	99SY-HI1c-S-4	Cadmium	0.089U mg/Kg	A
99-2178	99SY-BF1c-W-10	Copper Lead Thallium Molybdenum	4.8U ug/L 1.2U ug/L 2.9U ug/L 0.63U ug/L	A
99-2178	99SY-HI1c-W-23.2	Arsenic Copper Selenium Thallium	2.7U ug/L 11.3U ug/L 9.2U ug/L 8.9U ug/L	A
99-2178	99SY-RE3g-W-10	Arsenic Cobalt Lead Thallium	1.4U ug/L 0.33U ug/L 1.0U ug/L 2.3U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-1	Received Date:	03/02/1999
Sample ID:	**99SY-BF1C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	< 1.5	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Arsenic	7440-38-2	µg/L	5	< 1.2	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Barium	7440-39-3	µg/L	10	< 0.72	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Beryllium	7440-41-7	µg/L	2	< 0.11	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Cadmium	7440-43-9	µg/L	2	< 0.17	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Chromium	7440-47-3	µg/L	5	3.6	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Cobalt	7440-48-4	µg/L	5	< 0.29	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Copper	7440-50-8	µg/L	10	4.8	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Lead	7439-92-1	µg/L	5	1.2	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.22	B	CV		99M1358N	03/04/99	03/04/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	0.63	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Nickel	7440-02-0	µg/L	5	< 0.36	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Selenium	7782-49-2	µg/L	10	< 2.9	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Silver	7440-22-4	µg/L	10	0.91	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Thallium	7440-28-0	µg/L	10	2.9	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Vanadium	7440-62-2	µg/L	10	< 0.55	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Zinc	7440-66-6	µg/L	5	4.0	B	P		99M1372L	03/05/99	03/05/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-4	Received Date:	03/02/1999
Sample ID:	**99SY-A12A-W-21.4**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	0.15	B	CV		99M1358N	03/04/99	03/04/99	1	7470A

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-8	Received Date:	03/02/1999
Sample ID:	**99SY-A12C-W-21.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	0.10	B	CV		99M1358N	03/04/99	03/04/99	1	7470A

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-10	Received Date:	03/02/1999
Sample ID:	**99SY-HI1C-W-23.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	2.8	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Arsenic	7440-38-2	µg/L	5	2.7	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Barium	7440-39-3	µg/L	10	28.8		P		99M1372L	03/05/99	03/05/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.11	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Chromium	7440-47-3	µg/L	5	3.7	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Cobalt	7440-48-4	µg/L	5	12.6		P		99M1372L	03/05/99	03/05/99	1	6010C
Copper	7440-50-8	µg/L	10	11.3		P	U	99M1372L	03/05/99	03/05/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.95	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.099	B	CV		99M1358N	03/04/99	03/04/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	55.7		P		99M1372L	03/05/99	03/05/99	1	6010C
Nickel	7440-02-0	µg/L	5	19.4		P		99M1372L	03/05/99	03/05/99	1	6010C
Selenium	7782-49-2	µg/L	10	9.2	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Silver	7440-22-4	µg/L	10	1.6	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Thallium	7440-28-0	µg/L	10	8.9	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Vanadium	7440-62-2	µg/L	10	0.82	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Zinc	7440-66-6	µg/L	5	4.6	B	P		99M1372L	03/05/99	03/05/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-11	Received Date:	03/02/1999
Sample ID:	**99SY-RE3G-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.5	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Arsenic	7440-38-2	µg/L	5	1.4	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Barium	7440-39-3	µg/L	10	<0.72	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.11	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Chromium	7440-47-3	µg/L	5	0.60	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.33	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Copper	7440-50-8	µg/L	10	2.9	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Lead	7439-92-1	µg/L	5	1.0	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	0.11	B	CV		99M1358N	03/04/99	03/04/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	<0.44	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Nickel	7440-02-0	µg/L	5	1.3	B	P		99M1372L	03/05/99	03/05/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.9	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Thallium	7440-28-0	µg/L	10	2.3	~~B~~	P	U	99M1372L	03/05/99	03/05/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.55	U	P		99M1372L	03/05/99	03/05/99	1	6010C
Zinc	7440-66-6	µg/L	5	3.5	B	P		99M1372L	03/05/99	03/05/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	32178	Collected by:	BB/DB
		Lab Sample ID	99-2178-6	Received Date:	03/02/1999
Sample ID:	**99SY-A12B-W-20.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	0.13	B	CV		99M1358N	03/04/99	03/04/99	1	7470A

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-3	Received Date:	03/02/1999
Sample ID:	**99SY-A12A-S-3**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	0.29		CV		99M1359N	03/04/99	03/04/99	1	7470A

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-5	Received Date:	03/02/1999
Sample ID:	**99SY-A12B-S-3**	Sample Matrix	Soil	Moisture %:	6.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	<0.052	U	CV		99M1359N	03/04/99	03/04/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service ID:	992178	Collected by:	BB/DB
		Lab Sample ID:	99-2178-7	Received Date:	03/02/1999
Sample ID:	**99SY-A12C-S-3**	Sample Matrix	Soil	Moisture %:	6.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	< 0.053	U	CV		99M1359N	03/04/99	03/04/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/18/99

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Applied P & Ch Laboratory

Metal Analysis Results

8

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/02/1999
Project ID:	LBNSY AOCs	Service II.	992178	Collected by:	B[illegible]/DB
		Lab Sam[illegible] ID:	99-2178-9	Received Date:	0[illegible]2/1999
Sample ID:	**99SY-HI1C-S-4**	Sample Matrix	Soil	Moisture %:	7.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	<0.065	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.9		P		99M1353M	03/04/99	03/04/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	66.6		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	<0.0045	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.089	B	P	U	99M1353M	03/04/99	03/04/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	9.9		P	J	99M1353M	03/04/99	03/04/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	5.1		P		99M1353M	03/04/99	03/04/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	5.6		P		99M1353M	03/04/99	03/04/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	<0.053	U	CV		99M1359N	03/04/99	03/04/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	<0.026	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	7.1		P		99M1353M	03/04/99	03/04/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	0.86		P		99M1353M	03/04/99	03/04/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	<0.017	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	<0.075	U	P		99M1353M	03/04/99	03/04/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	17.4		P		99M1353M	03/04/99	03/04/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	27.1		P		99M1353M	03/04/99	03/04/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/16/99

9952

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 2, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Wet Chemistry

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2178

Sample Identification

99SY-BF1c-W-10
99SY-A12a-S-3
99SY-A12b-S-3
99SY-A12c-S-3
99SY-HI1c-S-4
99SY-RE3g-W-10
99SY-S1na-S-5
99SY-S1na-S-10
99SY-S1nb-S-5
99SY-S1nb-S-10
99SY-S1nc-S-5
99SY-S1nc-S-10
99SY-S1nd-S-5
99SY-S1nd-S-10
99SY-S1ne-S-5
99SY-BF1c-W-10DUP

Introduction

This data review covers 13 soil samples and 3 water samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9010 for Cyanide and EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample 99SY-RE3g-W-10 was identified as an equipment rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Equipment Rinsate ID	Analyte	Concentration (units)
99SY-RE3g-W-10	pH	7.35

Sample 99SY-BF1c-W-10 was identified as a field blank. No contaminant concentrations were found in this blank with the following exceptions:

Field Blank ID	Analyte	Concentration (units)
99SY-BF1c-W-10	pH	7.28

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 99-2178	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Sample Result Verification

Raw data were not reviewed for this SDG.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-S1nd-S-5 and 99SY-S1ne-S-5 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-S1nd-S-5	99SY-S1ne-S-5			
pH	8.79	8.21	7 (≤35)	-	-

Long Beach Naval Shipyard
Wet Chemistry - Data Qualification Summary - SDG 99-2178

SDG	Sample	Analyte	Flag	A or P	Reason
99-2178	99SY-A12a-S-3 99SY-A12b-S-3 99SY-A12c-S-3 99SY-Hl1c-S-4 99SY-S1na-S-5 99SY-S1na-S-10 99SY-S1nb-S-5 99SY-S1nb-S-10 99SY-S1nc-S-5 99SY-S1nc-S-10 99SY-S1nd-S-5 99SY-S1nd-S-10 99SY-S1ne-S-5	pH	None	P	Matrix spike/(Matrix) spike duplicates

Long Beach Naval Shipyard
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Wet Chemistry - Field Blank Data Qualification Summary - SDG 99-2178

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 335.2

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 335.2
Project ID: LBNSY AOCs Service ID: 992178 Collected by: BB/DB

Component Name: Cyanide, Total
CAS No: 57-12-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2178-1	99SY-BF1C-W-10	Water	03/02/99	03/02/99	03/04/99	99W2280	mg/L	0.05	<0.05	U
99-2178-11	99SY-RE3G-W-10	Water	03/02/99	03/02/99	03/04/99	99W2280	mg/L	0.05	<0.05	U
99W2280-MB-01		Water	03/04/99	03/04/99	03/04/99	99W2280	mg/L	0.05	<0.05	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name: C[illegible]M Federal Programs Corp. Project No: 6210-014 Anal. [illegible]thod 9040
Project ID: [illegible]SY AOCs Service ID: 992178 Colle[illegible] by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2178-1	99SY-BF1C-W-10	Water	03/02/99	03/02/99	03/02/99	99W2226	pH unit	0.01	7.28	
99-2178-3	99SY-A12A-S-3	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	7.62	
99-2178-5	99SY-A12B-S-3	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	7.90	
99-2178-7	99SY-A12C-S-3	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.04	
99-2178-9	99SY-HI1C-S-4	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	7.33	
99-2178-11	99SY-RE3G-W-10	Water	03/02/99	03/02/99	03/02/99	99W2226	pH unit	0.01	7.35	
99-2178-13	99SY-S1NA-S-5	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.42	
99-2178-14	99SY-S1NA-S-10	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.13	
99-2178-16	99SY-S1NB-S-5	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	7.80	
99-2178-17	99SY-S1NB-S-10	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.16	
99-2178-19	99SY-S1NC-S-5	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.67	
99-2178-20	99SY-S1NC-S-10	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	6.78	
99-2178-22	99SY-S1ND-S-5	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.79	
99-2178-23	99SY-S1ND-S-10	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.13	
99-2178-25	99SY-S1NE-S-5	Soil	03/02/99	03/02/99	03/10/99	99W2396	pH unit	0.01	8.21	
99W2226-MB-01		Water	03/02/99	03/02/99	03/02/99	99W2226	pH unit	0.01	6.10	
99W2396-MB-01		Soil	03/10/99	03/10/99	03/10/99	99W2396	pH unit	0.01	6.03	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/4/99

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cooler 1-03-02-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 2

Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - ~~Tenaya~~ DB Denver, Colorado

Project Name/Code LBNSY AOCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: D. Bjostad, B. Boyd

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	TPH-ext. 8015	TPH-P&T 8015	Metals (8)	Remarks
	995Y-S1na-S-5	3/2/99	0735	soil	4°C	2	X	X	X	X		
	995Y-S1na-S-10		0745	soil	4°C	2	X	X	X	X		
	995Y-S1na-W-10		0750	water	HCl-VOCs, TPH-g	6	X	X	X	X		
	995Y-S1nc-S-5		0835	soil	4°C	2	X	X	X	X		
	995Y-S1nc-S-10		0850	soil	4°C	2	X	X	X	X		
	995Y-S1nc-W-10		0900	water	HCl-VOCs, TPH-g	6	X	X	X	X		
	995Y-BT1s-W-8		0800	water	HCl	2	X					
	995Y-S1nb-S-5		0940	soil	4°C	2	X	X	X	X		
	995Y-S1nb-S-10		0945	soil	4°C	2	X	X	X	X		
	995Y-S1nb-W-9.4		0955	water	HCl-VOCs, TPH-g	6	X	X	X	X		
	995Y-S1nd-S-5		1050	soil	4°C	2	X	X	X	X		
	995Y-S1ne-S-5		1055	soil	4°C	2	X	X	X	X		
	995Y-S1nd-S-10		1058	soil	4°C	2	X	X	X	X		
	995Y-S1nd-W-9.6		1105	water	HCl-VOCs, TPH-g	6	X	X	X	X		
	995Y-S1ne-W-9.6		1110	Water	HCl-VOCs, TPH-g	6	X	X	X	X		

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Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or B); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/2/99 1630 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

cooler 1-03-02-99 cont.

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM-Denver, Colorado

Project Name/Code LBNSY AOCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: D. Bjostad, B. Boyd

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260	TPH-Pet 8015	Mercury 7470/7471	TPH-ext. 8015	Metals 6010	SVOCs 8270							Remarks
	995Y-RE3g-W-10	3/2/99	1100	water	HCl	4	X	X											
	995Y-RE3h-W-10	3/2/99	1115	water	HCl	4	X	X											
	995Y-BF1c-W-10	3/2/99	1130	water	HCl	4	X	X											
	995Y-A12a-S-3	3/2/99	1230	soil	4°C	1			X										
	995Y-A12b-S-3	3/2/99	1330	soil	4°C	1			X										
	995Y-A12c-S-3	3/2/99	1400	soil	4°C	1			X										
	995Y-HI1c-S-4	3/2/99	1450	soil	4°C	2				X	X	X							

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None . Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/2/99 /1630 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Cooler 2-03-02-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Denver, Colorado

Project Name/Code LBNSY AOCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by: D. Bjostad, B. Boyd

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	SVOCs 8270C	Metals 6010C	PCBs 8082	TPH-ext. 8015	Cyanide-9010	pH 9040	Mercury 7470/7471						Remarks
	995Y-RE3g-W-10	3/2/99	1100	water	metals HNO3 CN-NaOH	5	X	X	X	X	X	X							
	995Y-BF1c-W-10		1130	water	HNO3-metals CN-NaOH	5	X	X	X	X	X	X							
	995Y-A12a-W-21.4		1245	water	HNO3	1							X						
	995Y-A12b-W-20.9		1350	water	HNO3	1							X						
	995Y-A12c-W-21.2		1430	water	HNO3	1							X						
	995Y-HI1c-W-23.2	↓	1500	water	metals-HNO3	3	X	X		X									

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Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/2/99 / 1630 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients un[illegible]d that all terms described in the proposals, quotations for this project, and/or t[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]/es the right to terminate [illegible] service or withhold delivery of any reports, if in APCL's sole discretion the terms [illegible]e project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 3, 1999

LDC Report Date: April 9, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2216

Sample Identification

99SY-HI1a-S-6
99SY-HI1a-W-27.2**
99SY-HI1b-S-5
99SY-HI1b-W-25.9
99SY-HI1d-S-5
99SY-HI1d-W-24
99SY-HI1e-S-5
99SY-HI1e-W-18.7
99SY-HI1f-S-5
99SY-HI1f-W-18
99SY-HI1g-S-5**
99SY-HI1g-W-22.1
99SY-HI1h-S-5
99SY-HI1h-W-16.3
99SY-HI1k-S-6
99SY-HI1k-W-27.2
99SY-HI1k-S-6MS
99SY-HI1k-S-6MSD
99SY-HI1k-W-27.2MS
99SY-HI1k-W-27.2MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/11/99	2,4-Dinitrophenol Pyrene	28.0 26.2	99SY-HI1b-S-5 99SY-HI1d-S-5 99SY-HI1e-S-5 99SY-HI1f-S-5 99SY-HI1k-S-6	J J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-HI1k-W-27.2MS/MSD (All water samples in SDG 99-2216)	Pentachlorophenol	11 (24-115)	15 (24-115)	-	J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-HI1k-S-6	Chrysene-d12	251114 (268421-1073684)	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate	J J J J J J	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples

reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-HI1a-S-6 and 99SY-HI1k-S-6 and samples 99SY-HI1a-W-27.2** and 99SY-HI1k-W-27.2 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-HI1a-W-27.2**	99SY-HI1k-W-27.2			
Bis(2-ethylhexyl)phthalate	3	12	120 (≤100)	J	A
2-Methylnaphthalene	2	10U	200 (≤100)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2216

SDG	Sample	Compound	Flag	A or P	Reason
99-2216	99SY-HI1b-S-5 99SY-HI1d-S-5 99SY-HI1e-S-5 99SY-HI1f-S-5 99SY-HI1k-S-6	2,4-Dinitrophenol Pyrene	J J	A	Continuing calibration (%D)
99-2216	99SY-HI1a-W-27.2** 99SY-HI1b-W-25.9 99SY-HI1d-W-24 99SY-HI1e-W-16.7 99SY-HI1f-W-18 99SY-HI1g-W-22.1 99SY-HI1h-W-16.3 99SY-HI1k-W-27.2	Pentachlorophenol	J	A	Matrix spike/Matrix spike duplicates (%R)
99-2216	99SY-HI1k-S-6	Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate	J J J J J J	A	Internal standards (area)
99-2216	99SY-HI1a-W-27.2** 99SY-HI1k-W-27.2	Bis(2-ethylhexyl)phthalate 2-Methylnaphthalene	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-1	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-S-6**	Sample Matrix	Soil	Moisture %:	6.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	04:17
Data File Name:	2216-01	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	540	< 540	U
2	Acenaphthylene	208-96-8	µg/kg	540	< 540	U
3	Anthracene	120-12-7	µg/kg	540	< 540	U
4	Benz(a)anthracene	56-55-3	µg/kg	540	< 540	U
5	Benzo(a)pyrene	50-32-8	µg/kg	540	< 540	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	540	< 540	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	540	< 540	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	540	< 540	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	540	< 540	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	540	< 540	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	540	< 540	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	540	< 540	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	540	< 540	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	540	< 540	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	540	< 540	U
18	2-Chlorophenol	95-57-8	µg/kg	540	< 540	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	540	< 540	U
20	Chrysene	218-01-9	µg/kg	540	< 540	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	540	< 540	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	540	< 540	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	540	< 540	U
24	Dibenzofuran	132-64-9	µg/kg	540	< 540	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	540	< 540	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	540	< 540	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	540	< 540	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	540	< 540	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	540	< 540	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	540	< 540	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	540	< 540	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	540	< 540	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	540	< 540	U
37	Fluoranthene	206-44-0	µg/kg	540	< 540	U
38	Fluorene	86-73-7	µg/kg	540	< 540	U
39	Hexachlorobenzene	118-74-1	µg/kg	540	< 540	U
40	Hexachlorobutadiene	87-68-3	µg/kg	540	< 540	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	540	< 540	U
42	Hexachloroethane	67-72-1	µg/kg	540	< 540	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	540	< 540	U
44	Isophorone	78-59-1	µg/kg	540	< 540	U
45	2-Methylnaphthalene	91-57-6	µg/kg	540	< 540	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	540	< 540	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	540	< 540	U
48	Naphthalene	91-20-3	µg/kg	540	< 540	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	540	< 540	U
53	2-Nitrophenol	88-75-5	µg/kg	540	< 540	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	540	< 540	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	540	< 540	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	540	< 540	U
59	Phenol	108-95-2	µg/kg	540	< 540	U
60	Pyrene	129-00-0	µg/kg	540	< 540	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	540	< 540	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	540	< 540	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	540	< 540	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	55
2	2-Fluorophenol	367-12-4	25-103	54
3	Nitrobenzene-d5	4165-60-0	23-119	64
4	Phenol-d5	4165-62-2	24-112	57
5	Terphenyl-d14	1718-51-0	18-136	78
6	2,4,6-Tribromophenol	118-79-6	20-119	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	65
2	Chrysene-d12	1719-03-5	50-200	57
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	73
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	66
6	Phenanthrene-d10	1517-22-2	50-200	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-2	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-W-27.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	17:43
Data File Name:	2216-02	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 3	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	2	J
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	70
2	2-Fluorophenol	367-12-4	21- 99	46
3	Nitrobenzene-d5	4165-60-0	35-113	64
4	Phenol-d5	4165-62-2	10- 93	33
5	Terphenyl-d14	1718-51-0	33-140	71
6	2,4,6-Tribromophenol	118-79-6	10-122	66
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	92
2	Chrysene-d12	1719-03-5	50-200	107
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	95
4	Naphthalene-d8	1146-65-2	50-200	98
5	Perylene-d12	1520-96-3	50-200	84
6	Phenanthrene-d10	1517-22-2	50-200	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-3	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-S-5**	Sample Matrix	Soil	Moisture %:	11.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	12:25
Data File Name:	2216-03	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U.
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	91
2	2-Fluorophenol	367-12-4	25-103	88
3	Nitrobenzene-d5	4165-60-0	23-119	96
4	Phenol-d5	4165-62-2	24-112	83
5	Terphenyl-d14	1718-51-0	18-136	135
6	2,4,6-Tribromophenol	118-79-6	20-119	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	83
2	Chrysene-d12	1719-03-5	50-200	54
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	84
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	60
6	Phenanthrene-d10	1517-22-2	50-200	80
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-4	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-W-25.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	18:22
Data File Name:	2216-04	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	2	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	4	J
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	61
2	2-Fluorophenol	367-12-4	21- 99	40
3	Nitrobenzene-d5	4165-60-0	35-113	61
4	Phenol-d5	4165-62-2	10- 93	25
5	Terphenyl-d14	1718-51-0	33-140	65
6	2,4,6-Tribromophenol	118-79-6	10-122	61
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	96
2	Chrysene-d12	1719-03-5	50-200	115
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	90
4	Naphthalene-d8	1146-65-2	50-200	94
5	Perylene-d12	1520-96-3	50-200	90
6	Phenanthrene-d10	1517-22-2	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-5	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-S-5**	Sample Matrix	Soil	Moisture %:	16.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	13:08
Data File Name:	2216-05	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	< 600	U
2	Acenaphthylene	208-96-8	µg/kg	600	< 600	U
3	Anthracene	120-12-7	µg/kg	600	< 600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	< 600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	< 600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	< 600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	< 600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	< 600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	< 600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	< 600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	< 600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	< 600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	< 600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	< 600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	< 600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	< 600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	< 600	U
20	Chrysene	218-01-9	µg/kg	600	< 600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	< 600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	< 600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	< 600	U
24	Dibenzofuran	132-64-9	µg/kg	600	< 600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	< 600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	< 600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	< 600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	< 600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	< 600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	< 600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	< 600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	< 600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	< 600	U
37	Fluoranthene	206-44-0	µg/kg	600	< 600	U
38	Fluorene	86-73-7	µg/kg	600	< 600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	< 600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	< 600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	<600	U
42	Hexachloroethane	67-72-1	µg/kg	600	<600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	<600	U
44	Isophorone	78-59-1	µg/kg	600	<600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	<600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	<600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	<600	U
48	Naphthalene	91-20-3	µg/kg	600	<600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	<3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	<3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	<3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	<600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	<600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	<3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	<600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	<600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	<3000	U
58	Phenanthrene	85-01-8	µg/kg	600	<600	U
59	Phenol	108-95-2	µg/kg	600	<600	U
60	Pyrene	129-00-0	µg/kg	600	<600	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	<600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	<600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	<600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	84
2	2-Fluorophenol	367-12-4	25-103	83
3	Nitrobenzene-d5	4165-60-0	23-119	89
4	Phenol-d5	4165-62-2	24-112	78
5	Terphenyl-d14	1718-51-0	18-136	131
6	2,4,6-Tribromophenol	118-79-6	20-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	79
2	Chrysene-d12	1719-03-5	50-200	51
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	80
4	Naphthalene-d8	1146-65-2	50-200	82
5	Perylene-d12	1520-96-3	50-200	56
6	Phenanthrene-d10	1517-22-2	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-6	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-W-24**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	21:38
Data File Name:	2216-06	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	75
2	2-Fluorophenol	367-12-4	21- 99	47
3	Nitrobenzene-d5	4165-60-0	35-113	73
4	Phenol-d5	4165-62-2	10- 93	31
5	Terphenyl-d14	1718-51-0	33-140	72
6	2,4,6-Tribromophenol	118-79-6	10-122	79
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	97
2	Chrysene-d12	1719-03-5	50-200	118
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	94
5	Perylene-d12	1520-96-3	50-200	95
6	Phenanthrene-d10	1517-22-2	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-7	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-S-5**	Sample Matrix	Soil	Moisture %:	20.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	13:51
Data File Name:	2216-07	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	630	< 630	U
2	Acenaphthylene	208-96-8	µg/kg	630	< 630	U
3	Anthracene	120-12-7	µg/kg	630	< 630	U
4	Benz(a)anthracene	56-55-3	µg/kg	630	< 630	U
5	Benzo(a)pyrene	50-32-8	µg/kg	630	< 630	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	630	< 630	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	630	< 630	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	630	< 630	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	630	< 630	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	630	< 630	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	630	< 630	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	630	100	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	630	< 630	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	630	< 630	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1300	< 1300	U
16	4-Chloroaniline	106-47-8	µg/kg	1300	< 1300	U
17	2-Chloronaphthalene	91-58-7	µg/kg	630	< 630	U
18	2-Chlorophenol	95-57-8	µg/kg	630	< 630	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	630	< 630	U
20	Chrysene	218-01-9	µg/kg	630	< 630	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	630	< 630	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	630	< 630	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	630	< 630	U
24	Dibenzofuran	132-64-9	µg/kg	630	< 630	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	630	< 630	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	630	< 630	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	630	< 630	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1300	< 1300	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	630	< 630	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	630	< 630	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	630	< 630	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	630	< 630	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3100	< 3100	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3100	< 3100	UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	630	< 630	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	630	< 630	U
37	Fluoranthene	206-44-0	µg/kg	630	< 630	U
38	Fluorene	86-73-7	µg/kg	630	< 630	U
39	Hexachlorobenzene	118-74-1	µg/kg	630	< 630	U
40	Hexachlorobutadiene	87-68-3	µg/kg	630	< 630	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	630	< 630	U
42	Hexachloroethane	67-72-1	µg/kg	630	< 630	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	630	< 630	U
44	Isophorone	78-59-1	µg/kg	630	< 630	U
45	2-Methylnaphthalene	91-57-6	µg/kg	630	< 630	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	630	< 630	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	630	< 630	U
48	Naphthalene	91-20-3	µg/kg	630	< 630	U
49	2-Nitroaniline	88-74-4	µg/kg	3100	< 3100	U
50	3-Nitroaniline	99-09-2	µg/kg	3100	< 3100	U
51	4-Nitroaniline	100-01-6	µg/kg	3100	< 3100	U
52	Nitrobenzene	98-95-3	µg/kg	630	< 630	U
53	2-Nitrophenol	88-75-5	µg/kg	630	< 630	U
54	4-Nitrophenol	100-02-7	µg/kg	3100	< 3100	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	630	< 630	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	630	< 630	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3100	< 3100	U
58	Phenanthrene	85-01-8	µg/kg	630	< 630	U
59	Phenol	108-95-2	µg/kg	630	< 630	U
60	Pyrene	129-00-0	µg/kg	630	< 630	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	630	< 630	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	630	< 630	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	630	< 630	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	57
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	63
4	Phenol-d5	4165-62-2	24-112	55
5	Terphenyl-d14	1718-51-0	18-136	79
6	2,4,6-Tribromophenol	118-79-6	20-119	62
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	78
2	Chrysene-d12	1719-03-5	50-200	52
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	79
4	Naphthalene-d8	1146-65-2	50-200	81
5	Perylene-d12	1520-96-3	50-200	59
6	Phenanthrene-d10	1517-22-2	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-8	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-W-18.7**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	19:02
Data File Name:	2216-08	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	2	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	71
2	2-Fluorophenol	367-12-4	21- 99	48
3	Nitrobenzene-d5	4165-60-0	35-113	69
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	69
6	2,4,6-Tribromophenol	118-79-6	10-122	61
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	90
2	Chrysene-d12	1719-03-5	50-200	106
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
4	Naphthalene-d8	1146-65-2	50-200	98
5	Perylene-d12	1520-96-3	50-200	82
6	Phenanthrene-d10	1517-22-2	50-200	86
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-9	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-S-5**	Sample Matrix	Soil	Moisture %:	6.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	14:33
Data File Name:	2216-09	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	~~U~~ UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	61
2	2-Fluorophenol	367-12-4	25-103	62
3	Nitrobenzene-d5	4165-60-0	23-119	67
4	Phenol-d5	4165-62-2	24-112	59
5	Terphenyl-d14	1718-51-0	18-136	104
6	2,4,6-Tribromophenol	118-79-6	20-119	69
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	78
2	Chrysene-d12	1719-03-5	50-200	52
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	81
4	Naphthalene-d8	1146-65-2	50-200	83
5	Perylene-d12	1520-96-3	50-200	57
6	Phenanthrene-d10	1517-22-2	50-200	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-10	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-W-18**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	19:41
Data File Name:	2216-10	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	1	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	67
2	2-Fluorophenol	367-12-4	21- 99	43
3	Nitrobenzene-d5	4165-60-0	35-113	65
4	Phenol-d5	4165-62-2	10- 93	28
5	Terphenyl-d14	1718-51-0	33-140	70
6	2,4,6-Tribromophenol	118-79-6	10-122	66
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	106
2	Chrysene-d12	1719-03-5	50-200	125
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
4	Naphthalene-d8	1146-65-2	50-200	103
5	Perylene-d12	1520-96-3	50-200	99
6	Phenanthrene-d10	1517-22-2	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-11	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-S-5**	Sample Matrix	Soil	Moisture %:	5.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/13/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	01:11
Data File Name:	2216-11B	Sample Amount:	30.0 g	Dilution Factor:	4
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2100	< 2100	U
2	Acenaphthylene	208-96-8	µg/kg	2100	< 2100	U
3	Anthracene	120-12-7	µg/kg	2100	< 2100	U
4	Benz(a)anthracene	56-55-3	µg/kg	2100	**2190**	
5	Benzo(a)pyrene	50-32-8	µg/kg	2100	**1300**	**J**
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2100	**3730**	
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2100	**380**	**J**
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2100	< 2100	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2100	< 2100	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2100	< 2100	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2100	< 2100	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2100	< 2100	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2100	< 2100	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2100	< 2100	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4200	< 4200	U
16	4-Chloroaniline	106-47-8	µg/kg	4200	< 4200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2100	< 2100	U
18	2-Chlorophenol	95-57-8	µg/kg	2100	< 2100	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2100	< 2100	U
20	Chrysene	218-01-9	µg/kg	2100	**2240**	
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2100	< 2100	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2100	< 2100	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2100	< 2100	U
24	Dibenzofuran	132-64-9	µg/kg	2100	< 2100	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2100	< 2100	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2100	< 2100	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2100	< 2100	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4200	< 4200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2100	< 2100	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2100	< 2100	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2100	< 2100	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2100	< 2100	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	11000	< 11000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	11000	< 11000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2100	< 2100	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2100	< 2100	U
37	Fluoranthene	206-44-0	µg/kg	2100	**6500**	
38	Fluorene	86-73-7	µg/kg	2100	< 2100	U
39	Hexachlorobenzene	118-74-1	µg/kg	2100	< 2100	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2100	< 2100	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2100	<2100	U
42	Hexachloroethane	67-72-1	µg/kg	2100	<2100	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2100	390	J
44	Isophorone	78-59-1	µg/kg	2100	<2100	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2100	<2100	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2100	<2100	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2100	<2100	U
48	Naphthalene	91-20-3	µg/kg	2100	<2100	U
49	2-Nitroaniline	88-74-4	µg/kg	11000	<11000	U
50	3-Nitroaniline	99-09-2	µg/kg	11000	<11000	U
51	4-Nitroaniline	100-01-6	µg/kg	11000	<11000	U
52	Nitrobenzene	98-95-3	µg/kg	2100	<2100	U
53	2-Nitrophenol	88-75-5	µg/kg	2100	<2100	U
54	4-Nitrophenol	100-02-7	µg/kg	11000	<11000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2100	<2100	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2100	<2100	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	11000	<11000	U
58	Phenanthrene	85-01-8	µg/kg	2100	980	J
59	Phenol	108-95-2	µg/kg	2100	<2100	U
60	Pyrene	129-00-0	µg/kg	2100	4700	
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2100	<2100	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2100	<2100	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2100	<2100	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	25
3	Nitrobenzene-d5	4165-60-0	23-119	64
4	Phenol-d5	4165-62-2	24-112	40
5	Terphenyl-d14	1718-51-0	18-136	64
6	2,4,6-Tribromophenol	118-79-6	20-119	53
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	63
2	Chrysene-d12	1719-03-5	50-200	71
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	60
4	Naphthalene-d8	1146-65-2	50-200	62
5	Perylene-d12	1520-96-3	50-200	58
6	Phenanthrene-d10	1517-22-2	50-200	71
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-12	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-W-22.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/10/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	11:37
Data File Name:	2216-12A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	5	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	6	J
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	[illegible]0	U
42	Hexachloroethane	67-[illegible]1	µg/L	1[illegible]	0	U
43	Indeno(1,2,3-cd)pyrene	193-[illegible]5	µg/L	1[illegible]	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	54
2	2-Fluorophenol	367-12-4	21- 99	35
3	Nitrobenzene-d5	4165-60-0	35-113	53
4	Phenol-d5	4165-62-2	10- 93	23
5	Terphenyl-d14	1718-51-0	33-140	55
6	2,4,6-Tribromophenol	118-79-6	10-122	71
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	94
2	Chrysene-d12	1719-03-5	50-200	115
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	100
5	Perylene-d12	1520-96-3	50-200	92
6	Phenanthrene-d10	1517-22-2	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-13	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-S-5**	Sample Matrix	Soil	Moisture %:	16.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/18/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	03:27
Data File Name:	2216-13C	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	< 600	U
2	Acenaphthylene	208-96-8	µg/kg	600	< 600	U
3	Anthracene	120-12-7	µg/kg	600	< 600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	< 600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	< 600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	< 600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	< 600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	< 600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	< 600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	< 600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	< 600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	< 600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	< 600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	< 600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	< 600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	< 600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	< 600	U
20	Chrysene	218-01-9	µg/kg	600	< 600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	< 600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	< 600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	< 600	U
24	Dibenzofuran	132-64-9	µg/kg	600	< 600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	< 600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	< 600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	< 600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	< 600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	< 600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	< 600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	< 600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	< 600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	< 600	U
37	Fluoranthene	206-44-0	µg/kg	600	< 600	U
38	Fluorene	86-73-7	µg/kg	600	< 600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	< 600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	< 600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	< 600	U
42	Hexachloroethane	67-72-1	µg/kg	600	< 600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	< 600	U
44	Isophorone	78-59-1	µg/kg	600	< 600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	< 600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	< 600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	< 600	U
48	Naphthalene	91-20-3	µg/kg	600	< 600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	< 3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	< 3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	< 3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	< 600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	< 600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	< 3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	< 600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	< 600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	< 3000	U
58	Phenanthrene	85-01-8	µg/kg	600	< 600	U
59	Phenol	108-95-2	µg/kg	600	< 600	U
60	Pyrene	129-00-0	µg/kg	600	< 600	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	< 600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	< 600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	< 600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	57
2	2-Fluorophenol	367-12-4	25-103	54
3	Nitrobenzene-d5	4165-60-0	23-119	57
4	Phenol-d5	4165-62-2	24-112	54
5	Terphenyl-d14	1718-51-0	18-136	71
6	2,4,6-Tribromophenol	118-79-6	20-119	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	125
2	Chrysene-d12	1719-03-5	50-200	117
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	120
4	Naphthalene-d8	1146-65-2	50-200	124
5	Perylene-d12	1520-96-3	50-200	165
6	Phenanthrene-d10	1517-22-2	50-200	131
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-14	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-W-16.3**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	20:20
Data File Name:	2216-14	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	[illegible]0	U
42	Hexachloroethane	67-72-1	µg/L	10	[illegible]0	U
43	Ind[illegible](1,2,3-cd)pyrene	193-39-5	µg/L	10	[illegible]0	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	68
2	2-Fluorophenol	367-12-4	21- 99	45
3	Nitrobenzene-d5	4165-60-0	35-113	66
4	Phenol-d5	4165-62-2	10- 93	34
5	Terphenyl-d14	1718-51-0	33-140	69
6	2,4,6-Tribromophenol	118-79-6	10-122	48
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	76
2	Chrysene-d12	1719-03-5	50-200	91
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	86
5	Perylene-d12	1520-96-3	50-200	70
6	Phenanthrene-d10	1517-22-2	50-200	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-15	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-S-6**	Sample Matrix	Soil	Moisture %:	11.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/05/99	Anal. Date:	03/11/99
Batch No:	99G1795	Prep. No:	1 of 1	Anal. Time:	15:15
Data File Name:	2216-15	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	~~U~~ UJ
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	~~U~~ UJ
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	~~U~~ UJ
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	~~U~~ UJ
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	~~U~~ UJ
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	~~U~~ UJ
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U UJ
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	84
2	2-Fluorophenol	367-12-4	25-103	75
3	Nitrobenzene-d5	4165-60-0	23-119	89
4	Phenol-d5	4165-62-2	24-112	74
5	Terphenyl-d14	1718-51-0	18-136	129
6	2,4,6-Tribromophenol	118-79-6	20-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	70
2	Chrysene-d12	1719-03-5	50-200	47
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	74
4	Naphthalene-d8	1146-65-2	50-200	75
5	Perylene-d12	1520-96-3	50-200	51
6	Phenanthrene-d10	1517-22-2	50-200	70
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-16	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-W-27.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	20:59
Data File Name:	2216-16	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	12	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	~~U~~ UJ
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	82
2	2-Fluorophenol	367-12-4	21- 99	55
3	Nitrobenzene-d5	4165-60-0	35-113	83
4	Phenol-d5	4165-62-2	10- 93	39
5	Terphenyl-d14	1718-51-0	33-140	76
6	2,4,6-Tribromophenol	118-79-6	10-122	69
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	87
2	Chrysene-d12	1719-03-5	50-200	105
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
4	Naphthalene-d8	1146-65-2	50-200	103
5	Perylene-d12	1520-96-3	50-200	81
6	Phenanthrene-d10	1517-22-2	50-200	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 3, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2216

Sample Identification

99SY-HI1a-S-6
99SY-HI1a-W-27.2**
99SY-HI1b-S-5
99SY-HI1b-W-25.9
99SY-HI1d-S-5
99SY-HI1d-W-24
99SY-HI1e-S-5
99SY-HI1e-W-18.7
99SY-HI1f-S-5
99SY-HI1f-W-18
99SY-HI1g-S-5**
99SY-HI1g-W-22.1
99SY-HI1h-S-5
99SY-HI1h-W-16.3
99SY-HI1k-S-6
99SY-HI1k-W-27.2
99SY-HI1k-S-6MS
99SY-HI1k-S-6MSD
99SY-HI1k-W-27.2MS
99SY-HI1k-W-27.2MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

Samples 99SY-HI1a-W-27.2** and 99SY-HI1k-W-27.2 and samples 99SY-HI1a-S-6 and 99SY-HI1k-S-6 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	99SY-HI1a-W-27.2**	99SY-HI1k-W-27.2			
TPH as diesel	0.2	0.1	67 (≤20)	J	A
TPH as motor oil	0.1	0.5U	200 (≤20)	J	A

Compound	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI1a-S-6	99SY-HI1k-S-6			
TPH as diesel	11U	1	200 (≤35)	J	A
TPH as motor oil	11U	2	200 (≤35)	J	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2216

SDG	Sample	Compound	Flag	A or P	Reason
99-2216	99SY-HI1a-W-27.2** 99SY-HI1k-W-27.2 99SY-HI1a-S-6 99SY-HI1k-S-6	TPH as diesel TPH as motor oil	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

G

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-1	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-S-6**	Sample Matrix	Soil	Moisture %:	6.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	09:15
Data File Name:	2216.001	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U UJ
2	Motor oil		mg/kg	11	<11	U UJ

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-2	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-W-27.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/09/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	22:55
Data File Name:	2216.002	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.2	J
2	Motor oil		mg/L	0.5	0.1	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	100
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	BNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-3	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-S-5**	Sample Matrix	Soil	Moisture %:	11.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	09:40
Data File Name:	2216.003	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	8	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

a 4/6/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-4	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-W-25.9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/09/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	23:20
Data File Name:	2216.004	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.1	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-5	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-S-5**	Sample Matrix	Soil	Moisture %:	16.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	10:05
Data File Name:	2216.005	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	3	J
2	Motor oil		mg/kg	12	2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	92
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-6	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-W-24**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/09/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	23:45
Data File Name:	2216.006	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	**0.4**	**J**
2	Motor oil		mg/L	0.5	**0.2**	**J**

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	130
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/99

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-7	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-S-5**	Sample Matrix	Soil	Moisture %:	20.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	10:30
Data File Name:	2216.007	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	13	<13	U
2	Motor oil		mg/kg	13	50	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-8	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-W-18.7**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/10/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	00:10
Data File Name:	2216.008	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.07	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Proj[illegible] No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Serv[illegible] ID:	992216	Collected by:	BB/DB
		Lab [illegible]ple ID:	99-2216-9	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-S-5**	Sample Matrix	Soil	Moisture %:	6.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	10:55
Data File Name:	2216.009	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	3	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w/1699

11071

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-10	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-W-18**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/10/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	00:35
Data File Name:	2216.010	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	**0.1**	**J**
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	110
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/10/99

11073

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-11	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-S-5**	Sample Matrix	Soil	Moisture %:	5.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	16:11
Data File Name:	2216.011	Sample Amount:	20.0 g	Dilution Factor:	50
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	530	<530	U
2	Motor oil		mg/kg	530	3900	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	4380
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11075

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-12	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-W-22.1**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/10/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	01:01
Data File Name:	2216.012	Sample Amount:	400 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.8	
2	Motor oil		mg/L	0.5	0.5	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11/16/99

11077

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-13	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-S-5**	Sample Matrix	Soil	Moisture %:	16.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	11:21
Data File Name:	2216.013	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	3	J
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	74
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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11079

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-14	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-W-16.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/10/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	01:26
Data File Name:	2216.014	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.09	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	113
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11/16/99

11081

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-15	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-S-6**	Sample Matrix	Soil	Moisture %:	11.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	13:04
Data File Name:	2216.015	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	1	J
2	Motor oil		mg/kg	11	2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	108
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11699

11083

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-16	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-W-27.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/10/99
Batch No:	99G1814	Prep. No:	1 of 1	Anal. Time:	02:41
Data File Name:	2216.016	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.1	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

dup

4/16/99

11085

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 3, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2216

Sample Identification

99SY-HI1a-S-6
99SY-HI1a-W-27.2
99SY-HI1b-S-5
99SY-HI1b-W-25.9
99SY-HI1d-S-5
99SY-HI1d-W-24
99SY-HI1e-S-5
99SY-HI1e-W-18.7
99SY-HI1f-S-5
99SY-HI1f-W-18
99SY-HI1g-S-5
99SY-HI1g-W-22.1
99SY-HI1h-S-5
99SY-HI1h-W-16.3
99SY-HI1k-S-6
99SY-HI1k-W-27.2
99SY-HI1k-S-6MS
99SY-HI1k-S-6MSD
99SY-HI1k-S-6DUP
99SY-HI1k-W-27.2MS
99SY-HI1k-W-27.2MSD
99SY-HI1k-W-27.2DUP

Introduction

This data review covers 11 soil samples and 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Copper Zinc	0.042 mg/Kg 0.16 mg/Kg	All soil samples in SDG 99-2216
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Thallium Vanadium Zinc Molybdenum	1.8 ug/L 1.4 ug/L 4.3 ug/L 0.3 ug/L 0.4 ug/L 0.9 ug/L 1.7 ug/L 19.6 ug/L 2.9 ug/L 2.0 ug/L 2.4 ug/L 1.5 ug/L 6.7 ug/L 2.1 ug/L	All soil samples in SDG 99-2216
PB (prep blank)	Beryllium	0.12 ug/L	All water samples in SDG 99-2216

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Thallium Vanadium Zinc Molybdenum	1.4 ug/L 2.2 ug/L 6.4 ug/L 0.6 ug/L 0.4 ug/L 0.8 ug/L 1.5 ug/L 3.4 ug/L 1.3 ug/L 0.9 ug/L 2.1 ug/L 2.4 ug/L 1.3 ug/L 1.7 ug/L	All water samples in SDG 99-2216

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI1a-S-6	Cadmium	0.094 mg/Kg	0.094U mg/Kg
99SY-HI1b-S-5	Cadmium	0.060 mg/Kg	0.060U mg/Kg
99SY-HI1d-S-5	Antimony Cadmium	0.40 mg/Kg 0.088 mg/Kg	0.40U mg/Kg 0.088U mg/Kg
99SY-HI1f-S-5	Antimony Cadmium	0.18 mg/Kg 0.018 mg/Kg	0.18U mg/Kg 0.018U mg/Kg
99SY-HI1g-S-5	Silver	0.036 mg/Kg	0.036U mg/Kg
99SY-HI1h-S-5	Cadmium	0.053 mg/Kg	0.053U mg/Kg
99SY-HI1k-S-6	Antimony Cadmium	0.42 mg/Kg 0.098 mg/Kg	0.42U mg/Kg 0.098U mg/Kg
99SY-HI1a-W-27.2	Beryllium Cobalt Nickel Molybdenum	0.15 ug/L 1.4 ug/L 2.5 ug/L 5.9 ug/L	0.15U ug/L 1.4U ug/L 2.5U ug/L 5.9U ug/L
99SY-HI1b-W-25.9	Arsenic Cobalt	7.6 ug/L 1.2 ug/L	7.6U ug/L 1.2U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI1d-W-24	Cobalt Nickel Vanadium	1.3 ug/L 1.9 ug/L 1.2 ug/L	1.3U ug/L 1.9U ug/L 1.2U ug/L
99SY-HI1e-W-18.7	Cobalt Nickel Molybdenum	1.3 ug/L 2.7 ug/L 6.8 ug/L	1.3U ug/L 2.7U ug/L 6.8U ug/L
99SY-HI1f-W-18	Cobalt Copper Nickel	0.86 ug/L 0.87 ug/L 2.3 ug/L	0.86U ug/L 0.87U ug/L 2.3U ug/L
99SY-HI1g-W-22.1	Antimony Arsenic Cobalt	1.6 ug/L 4.8 ug/L 1.8 ug/L	1.6U ug/L 4.8U ug/L 1.8U ug/L
99SY-HI1h-W-16.3	Cobalt Nickel	1.1 ug/L 3.4 ug/L	1.1U ug/L 3.4U ug/L
99SY-HI1k-W-27.2	Beryllium Cobalt Copper Nickel	0.15 ug/L 1.2 ug/L 0.93 ug/L 1.7 ug/L	0.15U ug/L 1.2U ug/L 0.93U ug/L 1.7U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-HI1k-W-27.2MS/MSD (All water samples in SDG 99-2216)	Barium Lead Thallium	59 (75-125) 74 (75-125) 71 (75-125)	67 (75-125) - 71 (75-125)	- - -	J J J	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 99SY-HI1a-S-6 and 99SY-HI1k-S-6 and samples 99SY-HI1a-W-27.2 and 99SY-HI1k-W-27.2 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI1a-S-6	99SY-HI1k-S-6			
Antimony	0.75	0.42	56 (≤35)	J	A
Arsenic	2.5	3.6	36 (≤35)	J	A
Barium	77.8	80.9	4 (≤35)	-	-
Cadmium	0.094	0.098	4 (≤35)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-HI1a-S-6	99SY-HI1k-S-6			
Chromium	11.7	14.2	19 (≤35)	-	-
Cobalt	5.5	7.9	36 (≤35)	J	A
Copper	6.3	11.6	59 (≤35)	J	A
Lead	1.7	3.0	55 (≤35)	J	A
Mercury	0.045	0.021	73 (≤35)	J	A
Nickel	7.8	11.1	35 (≤35)	-	-
Selenium	0.11	0.34	102 (≤35)	J	A
Vanadium	19.9	26.0	27 (≤35)	-	-
Zinc	28.5	39.5	32 (≤35)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-HI1a-W-27.2	99SY-HI1k-W-27.2			
Barium	159	120	28 (≤20)	J	A
Beryllium	0.15	0.15	0 (≤20)	-	-
Cobalt	1.4	1.2	15 (≤20)	-	-
Copper	0.69U	0.93	200 (≤20)	J	A
Nickel	2.5	1.7	38 (≤20)	J	A
Selenium	5.9	5.5	7 (≤20)	-	-
Molybdenum	5.9	5.8	2 (≤20)	-	-

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2216

SDG	Sample	Analyte	Flag	A or P	Reason
99-2216	99SY-HI1a-W-27.2 99SY-HI1b-W-25.9 99SY-HI1d-W-24 99SY-HI1e-W-18.7 99SY-HI1f-W-18 99SY-HI1g-W-22.1 99SY-HI1h-W-16.3 99SY-HI1k-W-27.2	Barium Lead Thallium	J J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2216	99SY-HI1a-S-6 99SY-HI1k-S-6	Antimony Arsenic Cobalt Copper Lead Mercury Selenium	J J J J J J J	A	Field duplicates (RPD)
99-2216	99SY-HI1a-W-27.2 99SY-HI1k-W-27.2	Barium Copper Nickel	J J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2216

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2216	99SY-HI1a-S-6	Cadmium	0.094U mg/Kg	A
99-2216	99SY-HI1b-S-5	Cadmium	0.060U mg/Kg	A
99-2216	99SY-HI1d-S-5	Antimony Cadmium	0.40U mg/Kg 0.088U mg/Kg	A
99-2216	99SY-HI1f-S-5	Antimony Cadmium	0.18U mg/Kg 0.018U mg/Kg	A
99-2216	99SY-HI1g-S-5	Silver	0.036U mg/Kg	A
99-2216	99SY-HI1h-S-5	Cadmium	0.053U mg/Kg	A
99-2216	99SY-HI1k-S-6	Antimony Cadmium	0.42U mg/Kg 0.098U mg/Kg	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2216	99SY-HI1a-W-27.2	Beryllium Cobalt Nickel Molybdenum	0.15U ug/L 1.4U ug/L 2.5U ug/L 5.9U ug/L	A
99-2216	99SY-HI1b-W-25.9	Arsenic Cobalt	7.6U ug/L 1.2U ug/L	A
99-2216	99SY-HI1d-W-24	Cobalt Nickel Vanadium	1.3U ug/L 1.9U ug/L 1.2U ug/L	A
99-2216	99SY-HI1e-W-18.7	Cobalt Nickel Molybdenum	1.3U ug/L 2.7U ug/L 6.8U ug/L	A
99-2216	99SY-HI1f-W-18	Cobalt Copper Nickel	0.86U ug/L 0.87U ug/L 2.3U ug/L	A
99-2216	99SY-HI1g-W-22.1	Antimony Arsenic Cobalt	1.6U ug/L 4.8U ug/L 1.8U ug/L	A
99-2216	99SY-HI1h-W-16.3	Cobalt Nickel	1.1U ug/L 3.4U ug/L	A
99-2216	99SY-HI1k-W-27.2	Beryllium Cobalt Copper Nickel	0.15U ug/L 1.2U ug/L 0.93U ug/L 1.7U ug/L	A

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Metals - Field Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

G

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-1	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-S-6**	Sample Matrix	Soil	Moisture %:	6.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.4	0.75	B	P	J	99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	2.5		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	77.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0045	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.094	B	P	U	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.54	11.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.54	5.5		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.54	6.3		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1.7		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	0.045	B	CV	J	99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	< 0.026	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	7.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.54	0.11	B	P	J	99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.54	< 0.017	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	5.4	< 0.075	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.54	19.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.54	28.5		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11194

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-3	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-S-5**	Sample Matrix	Soil	Moisture %:	11.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	< 0.067	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	3.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	94.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0047	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.060	B	P	N	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	15.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	9.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	14.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	3.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.058	B	CV		99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.027	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	12.4		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	< 0.11	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.079	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	31.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	47.8		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11196

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-5	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-S-5**	Sample Matrix	Soil	Moisture %:	16.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.0	0.40	~~B~~	P	U	99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	3.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	90.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	< 0.0050	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.088	~~B~~	P	U	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.60	14.4		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.60	6.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.60	6.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	1.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	< 0.058	U	CV		99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	< 0.029	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	9.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.60	< 0.12	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.60	< 0.019	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	6.0	< 0.084	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.60	24.2		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.60	32.7		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11198

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-7	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-S-5**	Sample Matrix	Soil	Moisture %:	20.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.3	1.2	B	P	W	99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.38	5.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.3	171		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.25	<0.0053	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.25	0.17	B	P	W	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.63	30.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.63	17.0		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.63	30.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.38	8.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.25	0.050	B	CV		99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.25	<0.030	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.38	23.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.63	<0.13	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.63	<0.020	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	6.3	<0.088	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.63	55.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.63	89.3		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11200

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-9	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-S-5**	Sample Matrix	Soil	Moisture %:	6.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	0.18	~~B~~	P	W	99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	1.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	23.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0045	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.018	~~B~~	P	W	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.53	9.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.53	4.1		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.53	4.2		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1.2		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	< 0.052	U	CV		99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	< 0.026	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	6.1		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.53	< 0.11	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.53	< 0.017	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	5.3	< 0.075	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.53	15.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.53	19.5		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11202

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-11	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-S-5**	Sample Matrix	Soil	Moisture %:	5.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	11.8		P		99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	3.0		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	46.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0045	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.69		P		99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.53	214		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.53	7.0		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.53	3410		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1820		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	1.05	5.7		CV		99M1412N	03/09/99	03/09/99	5	7470A
Molybdenum	7439-98-7	mg/kg	0.21	2.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	53.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.53	< 0.11	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.53	0.036	B	P	U	99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	5.3	< 0.074	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.53	74.1		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.53	971		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/8/99

11204

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-13	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-S-5**	Sample Matrix:	Soil	Moisture %:	16.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.0	0.54	B	P		99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	3.3		P		99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	94.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	< 0.0050	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.053	B	P	N	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.60	16.5		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.60	8.6		P		99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.60	19.2		P		99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	5.1		P		99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	0.033	B	CV		99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	< 0.029	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	11.4		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.60	< 0.12	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.60	< 0.019	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	6.0	< 0.084	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.60	32.7		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.60	36.3		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

1120E

Applied P & Ch Laboratory

Metal Analysis Results

15

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-15	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-S-6**	Sample Matrix	Soil	Moisture %:	11.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.42	~~B~~	P	NJ	99M1405M	03/09/99	03/09/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	3.6		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	80.9		P		99M1405M	03/09/99	03/09/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0047	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.098	~~B~~	P	N	99M1405M	03/09/99	03/09/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	14.2		P		99M1405M	03/09/99	03/09/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	7.9		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	11.6		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	3.0		P	J	99M1405M	03/09/99	03/09/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.021	~~B~~	CV	J	99M1412N	03/09/99	03/09/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.027	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	11.1		P		99M1405M	03/09/99	03/09/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	0.34	~~B~~	P	J	99M1405M	03/09/99	03/09/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.079	U	P		99M1405M	03/09/99	03/09/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	26.0		P		99M1405M	03/09/99	03/09/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	39.5		P		99M1405M	03/09/99	03/09/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11208

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-2	Received Date:	03/03/1999
Sample ID:	**99SY-HI1A-W-27.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	159		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.15	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.4	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.9		P	U	99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.5	~~B~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.9	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11195

Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-4	Received Date:	03/03/1999
Sample ID:	**99SY-HI1B-W-25.9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	7.6		P	U	99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	114		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.2	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	18.0		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	11.4		P		99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.3	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/8/99

11197

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-6	Received Date:	03/03/1999
Sample ID:	**99SY-HI1D-W-24**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	24.6		P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	171		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.3	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	16.3		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	1.9	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.2	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11199

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-8	Received Date:	03/03/1999
Sample ID:	**99SY-HI1E-W-18.7**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	217		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.3	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.8		P	U	99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.7	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.9	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11201

Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-10	Received Date:	03/03/1999
Sample ID:	**99SY-HI1F-W-18**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	193		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.86	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	0.87	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	9.8		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.3	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	3.7	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

11203

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-12	Received Date:	03/03/1999
Sample ID:	**99SY-HI1G-W-22.1**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	1.6	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	4.8	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	99.5		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	< 0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	< 0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	18.2		P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.8	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	39.1		P		99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	2.9	~~B~~	P	J	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	1.0	0.23	B	CV		99M1380N	03/07/99	03/07/99	2	7470A
Molybdenum	7439-98-7	µg/L	5	16.9		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	23.3		P		99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	< 2.0	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	< 0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	126		P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	15.3		P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-14	Received Date:	03/03/1999
Sample ID:	**99SY-HI1H-W-16.3**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	108		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.1	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	15.9		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.4	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	4.7	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/03/1999
Project ID:	LBNSY AOCs	Service ID:	992216	Collected by:	BB/DB
		Lab Sample ID:	99-2216-16	Received Date:	03/03/1999
Sample ID:	**99SY-HI1K-W-27.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	µg/L	10	120		P	J	99M1386M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.15	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.2	~~B~~	P	U	99M1386M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	µg/L	10	0.93	~~B~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	5.8		P		99M1386M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	µg/L	5	1.7	~~B~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.5	B	P		99M1386M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1386M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1386M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1386M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/4/99

1129

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 3, 1999

LDC Report Date: April 8, 1999

Matrix: Soil

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2216

Sample Identification

99SY-HI1a-S-6
99SY-HI1b-S-5
99SY-HI1d-S-5
99SY-HI1e-S-5
99SY-HI1f-S-5
99SY-HI1g-S-5
99SY-HI1h-S-5
99SY-HI1k-S-6

Introduction

This data review covers 8 soil samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9045 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2216	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-HI1a-S-6 and 99SY-HI1k-S-6 were identified as field duplicates. The results are listed as follows:

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-HI1a-S-6	99SY-HI1k-S-6			
pH	6.98	8.07	14 (≤35)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2216

SDG	Sample	Analyte	Flag	A or P	Reason
99-2216	99SY-HI1a-S-6 99SY-HI1b-S-5 99SY-HI1d-S-5 99SY-HI1e-S-5 99SY-HI1f-S-5 99SY-HI1g-S-5 99SY-HI1h-S-5 99SY-HI1k-S-6	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2216

No Sample Data Qualified in this SDG

G

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992216 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2216-1	99SY-HI1A-S-6	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	6.98	
99-2216-3	99SY-HI1B-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	6.43	
99-2216-5	99SY-HI1D-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	6.62	
99-2216-7	99SY-HI1E-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	8.23	
99-2216-9	99SY-HI1F-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	7.72	
99-2216-11	99SY-HI1G-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	6.58	
99-2216-13	99SY-HI1H-S-5	Soil	03/03/99	03/03/99	03/05/99	99W2309	pH unit	0.01	7.25	
99-2216-15	99SY-HI1K-S-6	Soil	03/03/99	03/03/99	03/22/99	99W2687	pH unit	0.01	8.07	
99W2309-MB-01		Soil	03/05/99	03/05/99	03/05/99	99W2309	pH unit	0.01	6.08	
99W2687-MB-01		Soil	03/22/99	03/22/99	03/22/99	99W2687	pH unit	0.01	6.15	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Cooler 1 - 03-03-99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code: LBNSY AOCs | Job #6210-014 | P.O. #

Project Address: Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270C	TPHex tr 8015m	Metals 6010 C	Remarks
	99SY-HI1a-S-6	3/3/99	0730	Soil	4°C	2	X	X	X	
	99SY-HI1k-S-6	3/3/99	0735	soil	4°C	4	X	X	X	MS/MSD
	99SY-HI1a-W-27.2		0850	water	HNO3-metals	3	X	X	X	
	99SY-HI1k-W-27.2		0900	water	HNO3-metals	9	X	X	X	MS/MSD
	99SY-HI1b-S-6.5 BP		0915	soil	4°C	2	X	X	X	
	99SY-HI1g-S-5		1415	soil	4°C	2	X	X	X	
	99SY-HI1g-W-22.1		1430	water	HNO3-metals	3	X	X	X	TPH bottle only 1/2 full. Oily appearance.

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad | Date/Time 3/3/99 / 1615 | Received by | Date/Time /

Relinquished by | Date/Time / | Received by | Date/Time /

APCL USE ONLY Service # | Note:

Clients und d that all terms described in the proposals, quotations for this project, and/or t eral terms provided in the current APCL price schedules will be followed. APCL es the ri to terminate service or withhold delivery of any reports, if in APCL's sole discretion the terms project have been broken.

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Cooler 2.05.05 [illegible]

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code: LBNSY AOCs | Job #6210-014 | P.O. #

Project Address: Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270C	TPH ext. 8015M	Metals 6010C	Remarks
	995Y-HI1b-W-25.9	3/3/99	0935	water	metals-HNO_3	3	X	X	X	
	995Y-HI1d-S-5		1025	soil	4°C	2	X	X	X	
	995Y-HI1d-W-24		1045	water	metals-HNO_3	3	X	X	X	
	995Y-HI1e-S-5		1135	soil	4°C	2	X	X	X	
	995Y-HI1e-W-18.7		1150	water	metals-HNO_3	3	X	X	X	
	995Y-HI1h-S-5		1225	soil	4°C	2	X	X	X	
	995Y-HI1h-W-16.3		1250	water	metals-HNO_3	3	X	X	X	
	995Y-HI1f-S-5		1325	soil	4°C	2	X	X	X	
	995Y-HI1f-W-~~18~~ FB		1335	water	metals-HNO_3	3	X	X	X	

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished	by Dave Bjostad	Date/Time 3/3/99 /1615	Received	by	Date/Time	/
Relinquished	by	Date/Time /	Received	by	Date/Time	/

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 4, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2224

Sample Identification

99SY-H1i-S-5
99SY-H1i-W-25
99SY-H1j-S-5
99SY-H1j-W-30

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were

within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99G1848MS/MSD (All water samples in SDG 99-2224)	Pentachlorophenol	11 (24-115)	15 (24-115)	-	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2224

SDG	Sample	Compound	Flag	A or P	Reason
99-2224	99SY-H1i-W-25 99SY-H1j-W-30	Pentachlorophenol	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-1	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-S-5**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	19:55
Data File Name:	2224-01	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#41899

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	57
2	2-Fluorophenol	367-12-4	25-103	52
3	Nitrobenzene-d5	4165-60-0	23-119	58
4	Phenol-d5	4165-62-2	24-112	51
5	Terphenyl-d14	1718-51-0	18-136	63
6	2,4,6-Tribromophenol	118-79-6	20-119	50
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	109
2	Chrysene-d12	1719-03-5	50-200	122
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
4	Naphthalene-d8	1146-65-2	50-200	109
5	Perylene-d12	1520-96-3	50-200	105
6	Phenanthrene-d10	1517-22-2	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-2	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-W-25**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	17:04
Data File Name:	2224-02	Sample Amount:	500. mL	Dilution Factor:	1
Extract Vol.	0.5 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	7	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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MH 1859

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	69
2	2-Fluorophenol	367-12-4	21- 99	56
3	Nitrobenzene-d5	4165-60-0	35-113	63
4	Phenol-d5	4165-62-2	10- 93	46
5	Terphenyl-d14	1718-51-0	33-140	77
6	2,4,6-Tribromophenol	118-79-6	10-122	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	96
2	Chrysene-d12	1719-03-5	50-200	114
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	95
4	Naphthalene-d8	1146-65-2	50-200	96
5	Perylene-d12	1520-96-3	50-200	90
6	Phenanthrene-d10	1517-22-2	50-200	93
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-3	Received Date:	03/04/1999
Sample ID:	**99SY-H1J-S-5**	Sample Matrix	Soil	Moisture %:	10.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	19:16
Data File Name:	2224-03	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	58
2	2-Fluorophenol	367-12-4	25-103	52
3	Nitrobenzene-d5	4165-60-0	23-119	58
4	Phenol-d5	4165-62-2	24-112	51
5	Terphenyl-d14	1718-51-0	18-136	65
6	2,4,6-Tribromophenol	118-79-6	20-119	49
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	116
2	Chrysene-d12	1719-03-5	50-200	125
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	115
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	108
6	Phenanthrene-d10	1517-22-2	50-200	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/18/99 11932

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-4	Received Date:	03/04/1999
Sample ID:	**99SY-H1J-W-30**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/08/99	Anal. Date:	03/09/99
Batch No:	99G1848	Prep. No:	1 of 1	Anal. Time:	16:25
Data File Name:	2224-04	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	2	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	76
2	2-Fluorophenol	367-12-4	21- 99	57
3	Nitrobenzene-d5	4165-60-0	35-113	76
4	Phenol-d5	4165-62-2	10- 93	41
5	Terphenyl-d14	1718-51-0	33-140	71
6	2,4,6-Tribromophenol	118-79-6	10-122	61
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	97
2	Chrysene-d12	1719-03-5	50-200	120
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	94
5	Perylene-d12	1520-96-3	50-200	95
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11938

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 4, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

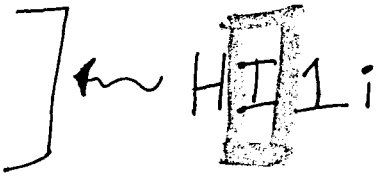
Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2224

Sample Identification

99SY-H1i-S-5
99SY-H1i-W-25
99SY-H1j-S-5
99SY-H1j-W-30



Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

H

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-1	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-S-5**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	13:29
Data File Name:	2224.001	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	3	J
2	Motor oil		mg/kg	10	3	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	93
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

12167

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-2	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-W-25**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/07/99
Batch No:	99G1815	Prep. No:	1 of 1	Anal. Time:	15:29
Data File Name:	2224.002	Sample Amount:	400 mL	Dilution Factor:	2.5
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	1.3	0.2	J
2	Motor oil		mg/L	1.3	<1.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	114
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-3	Received Date:	03/04/1999
Sample ID:	**99SY-H1J-S-5**	Sample Matrix	Soil	Moisture %:	10.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/05/99	Anal. Date:	03/10/99
Batch No:	99G1794	Prep. No:	1 of 1	Anal. Time:	13:55
Data File Name:	2224.003	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	2	J
2	Motor oil		mg/kg	11	3	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	109
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

12171

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-4	Received Date:	03/04/1999
Sample ID:	**99SY-H1J-W-30**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/06/99	Anal. Date:	03/07/99
Batch No:	99G1815	Prep. No:	1 of 1	Anal. Time:	15:55
Data File Name:	2224.004	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	136
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

12173

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 4, 1999

LDC Report Date: April 7, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2224

Sample Identification

99SY-H1i-S-5
99SY-H1i-W-25
99SY-H1j-S-5
99SY-H1j-W-30
99SY-SWba-S-10**
99SY-SWba-S-6.5
99SY-SWba-W-19.5
99SY-SWbb-S-10
99SY-SWbb-S-6.5
99SY-SWbb-W-17.8**
99SY-SWbc-S-10
99SY-SWbc-S-6.5
99SY-SWbc-W-14.8
99SY-H1i-S-5MS
99SY-H1i-S-5MSD
99SY-H1i-S-5DUP

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Arsenic Barium Beryllium Copper Selenium Vanadium	0.092 mg/Kg 0.045 mg/Kg 0.072 mg/Kg 0.040 mg/Kg 0.12 mg/Kg 0.044 mg/Kg	All soil samples in SDG 99-2224
ICB/CCB	Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Silver Thallium Vanadium Zinc Molybdenum	3.1 ug/L 3.2 ug/L 0.3 ug/L 0.4 ug/L 1.2 ug/L 1.2 ug/L 4.7 ug/L 1.6 ug/L 1.1 ug/L 0.5 ug/L 1.9 ug/L 1.8 ug/L 2.5 ug/L 1.4 ug/L	All soil samples in SDG 99-2224
PB (prep blank)	Cadmium Nickel Thallium Vanadium Molybdenum	0.26 ug/L 0.36 ug/L 3.0 ug/L 1.1 ug/L 0.58 ug/L	All water samples in SDG 99-2224

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Barium Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Selenium Silver Thallium Vanadium Molybdenum	6.5 ug/L 3.7 ug/L 0.5 ug/L 1.2 ug/L 1.5 ug/L 0.8 ug/L 4.9 ug/L 2.7 ug/L 1.2 ug/L 4.4 ug/L 2.0 ug/L 5.4 ug/L 2.0 ug/L 4.7 ug/L	All water samples in SDG 99-2224

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-H1i-S-5	Cadmium Selenium	0.064 mg/Kg 0.11 mg/Kg	0.064U mg/Kg 0.11U mg/Kg
99SY-H1j-S-5	Cadmium	0.068 mg/Kg	0.068U mg/Kg
99SY-H1i-W-25	Cobalt Copper Lead Silver	2.5 ug/L 18.1 ug/L 6.9 ug/L 4.1 ug/L	2.5U ug/L 18.1U ug/L 6.9U ug/L 4.1U ug/L
99SY-H1j-W-30	Antimony Cobalt Copper Lead Nickel Silver Vanadium Molybdenum	6.9 ug/L 2.6 ug/L 13.0 ug/L 5.4 ug/L 4.3 ug/L 3.7 ug/L 4.7 ug/L 19.9 ug/L	6.9U ug/L 2.6U ug/L 13.0U ug/L 5.4U ug/L 4.3U ug/L 3.7U ug/L 4.7U ug/L 19.9U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2224	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2224	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2224

SDG	Sample	Analyte	Flag	A or P	Reason
99-2224	99SY-H1i-S-5 99SY-H1i-W-25 99SY-H1j-S-5 99SY-H1j-W-30 99SY-SWba-S-10** 99SY-SWba-S-6.5 99SY-SWba-W-19.5 99SY-SWbb-S-10 99SY-SWbb-S-6.5 99SY-SWbb-W-17.8** 99SY-SWbc-S-10 99SY-SWbc-S-6.5 99SY-SWbc-W-14.8	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	None	P	Matrix spike/Matrix spike duplicates
99-2224	99SY-H1i-S-5 99SY-H1i-W-25 99SY-H1j-S-5 99SY-H1j-W-30 99SY-SWba-S-10** 99SY-SWba-S-6.5 99SY-SWba-W-19.5 99SY-SWbb-S-10 99SY-SWbb-S-6.5 99SY-SWbb-W-17.8** 99SY-SWbc-S-10 99SY-SWbc-S-6.5 99SY-SWbc-W-14.8	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	None	P	Duplicate sample analysis

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2224

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2224	99SY-H1i-S-5	Cadmium Selenium	0.064U mg/Kg 0.11U mg/Kg	A
99-2224	99SY-H1j-S-5	Cadmium	0.068U mg/Kg	A
99-2224	99SY-H1i-W-25	Cobalt Copper Lead Silver	2.5U ug/L 18.1U ug/L 6.9U ug/L 4.1U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2224	99SY-H1j-W-30	Antimony Cobalt Copper Lead Nickel Silver Vanadium Molybdenum	6.9U ug/L 2.6U ug/L 13.0U ug/L 5.4U ug/L 4.3U ug/L 3.7U ug/L 4.7U ug/L 19.9U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-1	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-S-5**	Sample Matrix	Soil	Moisture %:	3.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	0.37	B	P		99M1387M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	3.2		P		99M1387M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	80.9		P		99M1387M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0044	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.064	B	P	N	99M1387M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	11.7		P		99M1387M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	6.4		P		99M1387M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	6.0		P		99M1387M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	1.6		P		99M1387M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	< 0.051	U	CV		99M1381N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	< 0.025	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	7.9		P		99M1387M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	0.11	B	P	N	99M1387M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	< 0.017	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	< 0.073	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	22.6		P		99M1387M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	29.8		P		99M1387M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-2	Received Date:	03/04/1999
Sample ID:	**99SY-H1I-W-25**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	20	< 3.0	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Arsenic	7440-38-2	µg/L	10	7.7	B	P		99M1400L	03/09/99	03/09/99	2	6010C
Barium	7440-39-3	µg/L	20	286		P		99M1400L	03/09/99	03/09/99	2	6010C
Beryllium	7440-41-7	µg/L	4	< 0.22	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Cadmium	7440-43-9	µg/L	4	< 0.34	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Chromium	7440-47-3	µg/L	10	9.0	B	P		99M1400L	03/09/99	03/09/99	2	6010C
Cobalt	7440-48-4	µg/L	10	2.5	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Copper	7440-50-8	µg/L	20	18.1	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Lead	7439-92-1	µg/L	10	6.9	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Mercury	7439-97-6	µg/L	1	< 0.19	U	CV		99M1380N	03/07/99	03/07/99	2	7470A
Molybdenum	7439-98-7	µg/L	10	91.3		P		99M1400L	03/09/99	03/09/99	2	6010C
Nickel	7440-02-0	µg/L	10	19.5		P		99M1400L	03/09/99	03/09/99	2	6010C
Selenium	7782-49-2	µg/L	20	< 5.8	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Silver	7440-22-4	µg/L	20	4.1	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Thallium	7440-28-0	µg/L	20	< 3.2	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Vanadium	7440-62-2	µg/L	20	< 1.1	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Zinc	7440-66-6	µg/L	10	7.3	B	P		99M1400L	03/09/99	03/09/99	2	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

W 4/8/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs

Project No: 6210-014
Service ID: 992224
Lab Sample ID: 99-2224-3
Sample Matrix Soil

Collection Date: 03/04/1999
Collected by: B.Boyd
Received Date: 03/04/1999
Moisture %: 10.3

Sample ID: **99SY-H1J-S-5**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.45	B	P		99M1387M	03/08/99	03/08/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	4.3		P		99M1387M	03/08/99	03/08/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	71.8		P		99M1387M	03/08/99	03/08/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0047	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.068	B	P	U	99M1387M	03/08/99	03/08/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	18.0		P		99M1387M	03/08/99	03/08/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	10.0		P		99M1387M	03/08/99	03/08/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	9.9		P		99M1387M	03/08/99	03/08/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	4.6		P		99M1387M	03/08/99	03/08/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	< 0.055	U	CV		99M1381N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.027	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	11.1		P		99M1387M	03/08/99	03/08/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	< 0.11	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.078	U	P		99M1387M	03/08/99	03/08/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	30.8		P		99M1387M	03/08/99	03/08/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	30.4		P		99M1387M	03/08/99	03/08/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs
Sample ID: **99SY-H1J-W-30**
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992224
Lab Sample ID: 99-2224-4
Sample Matrix Water

Collection Date: 03/04/1999
Collected by: B.Boyd
Received Date: 03/04/1999
Moisture %: –

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	20	6.9	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Arsenic	7440-38-2	µg/L	10	7.2	B	P		99M1400L	03/09/99	03/09/99	2	6010C
Barium	7440-39-3	µg/L	20	203		P		99M1400L	03/09/99	03/09/99	2	6010C
Beryllium	7440-41-7	µg/L	4	<0.22	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Cadmium	7440-43-9	µg/L	4	<0.34	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Chromium	7440-47-3	µg/L	10	10.6		P		99M1400L	03/09/99	03/09/99	2	6010C
Cobalt	7440-48-4	µg/L	10	2.6	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Copper	7440-50-8	µg/L	20	13.0	B	P	↓	99M1400L	03/09/99	03/09/99	2	6010C
Lead	7439-92-1	µg/L	10	5.4	B	P		99M1400L	03/09/99	03/09/99	2	6010C
Mercury	7439-97-6	µg/L	0.5	<0.19	U	CV		99M1380N	03/07/99	03/07/99	1	7470A
Molybdenum	7439-98-7	µg/L	10	19.9		P	U	99M1400L	03/09/99	03/09/99	2	6010C
Nickel	7440-02-0	µg/L	10	4.3	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Selenium	7782-49-2	µg/L	20	<5.8	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Silver	7440-22-4	µg/L	20	3.7	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Thallium	7440-28-0	µg/L	20	<3.2	U	P		99M1400L	03/09/99	03/09/99	2	6010C
Vanadium	7440-62-2	µg/L	20	4.7	~~B~~	P	U	99M1400L	03/09/99	03/09/99	2	6010C
Zinc	7440-66-6	µg/L	10	11.0		P		99M1400L	03/09/99	03/09/99	2	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-5	Received Date:	03/04/1999
Sample ID:	**99SY-SWBA-S-10**	Sample Matrix	Soil	Moisture %:	5.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	< 0.052	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-6	Received Date:	03/04/1999
Sample ID:	**99SY-SWBA-S-6.5**	Sample Matrix	Soil	Moisture %:	5.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	< 0.052	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-7	Received Date:	03/04/1999
Sample ID:	**99SY-SWBA-W-19.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-8	Received Date:	03/04/1999
Sample ID:	**99SY-SWBB-S-10**	Sample Matrix	Soil	Moisture %:	8.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.22	< 0.053	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/19/99

12275

Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-9	Received Date:	03/04/1999
Sample ID:	**99SY-SWBB-S-6.5**	Sample Matrix	Soil	Moisture %:	6.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	<0.052	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/4/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-10	Received Date:	03/04/1999
Sample ID:	**99SY-SWBB-W-17.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/8/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-11	Received Date:	03/04/1999
Sample ID:	**99SY-SWBC-S-10**	Sample Matrix	Soil	Moisture %:	12.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.23	< 0.056	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-12	Received Date:	03/04/1999
Sample ID:	**99SY-SWBC-S-6.5**	Sample Matrix	Soil	Moisture %:	6.1
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	< 0.052	U	CV		99M1381N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

12279

13

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/04/1999
Project ID:	LBNSY AOCs	Service ID:	992224	Collected by:	B.Boyd
		Lab Sample ID:	99-2224-13	Received Date:	03/04/1999
Sample ID:	**99SY-SWBC-W-14.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1380N	03/07/99	03/07/99	1	7470A

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL
B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control
* - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control
E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

12280

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 4, 1999

LDC Report Date: April 8, 1999

Matrix: Soil

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2224

Sample Identification

99SY-H1i-S-5
99SY-H1j-S-5
99SY-SWba-S-10
99SY-SWba-S-6.5
99SY-SWbb-S-10
99SY-SWbb-S-6.5
99SY-SWbc-S-10
99SY-SWbc-S-6.5

Introduction

This data review covers 8 soil samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9045 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2224	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2224

SDG	Sample	Analyte	Flag	A or P	Reason
99-2224	99SY-H1i-S-5 99SY-H1j-S-5 99SY-SWba-S-10 99SY-SWba-S-6.5 99SY-SWbb-S-10 99SY-SWbb-S-6.5 99SY-SWbc-S-10 99SY-SWbc-S-6.5	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2224

No Sample Data Qualified in this SDG

H

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992224 Collected by: B.Boyd

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2224-1	99SY-H1I-S-5	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	8.82	
99-2224-3	99SY-H1J-S-5	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	8.23	
99-2224-5	99SY-SWBA-S-10	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.35	
99-2224-6	99SY-SWBA-S-6.5	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.58	
99-2224-8	99SY-SWBB-S-10	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.71	
99-2224-9	99SY-SWBB-S-6.5	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.87	
99-2224-11	99SY-SWBC-S-10	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.14	
99-2224-12	99SY-SWBC-S-6.5	Soil	03/04/99	03/04/99	03/17/99	99W2607	pH unit	0.01	9.33	
99W2607-MB-01		Soil	03/17/99	03/17/99	03/17/99	99W2607	pH unit	0.01	6.24	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/16/99

12574

Cooler 1-03-04 99

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code LBNSY AOCs | Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270C	TPH-ext. 8015M	Metals 6010C	Mercury 7470/7471	Remarks
	995Y-HI1i-S-5	3/4/99	0810	soil	4°C	2	X	X	X		
	995Y-HI1i-W-25	↓	0830	water	Metals-HNO_3	2	X	X	X		Metals bottle 1/4 full. 1 L for SVOCs + TPH. (unable to collect more).
	995Y-HI1j-S-5	3/4/99	1005	soil	4°C	2	X	X	X		
	995Y-HI1j-W-30		1020	water	Metals-HNO_3	3	X	X	X		
	995Y-SWba-S-6.5		1240	soil	4°C	1				X	
	995Y-SWba-S-10		1245	soil	4°C	1				X	
	995Y-SWbb-S-6.5		1345	soil	4°C	1				X	
	995Y-SWbb-S-10		1350	soil	4°C	1				X	
	995Y-SWba-W-19.5		1300	water	HNO_3	1				X	200 ml
	995Y-SWbb-W-17.8	↓	1425	water	HNO_3	1				X	300 ml
	995Y-SWbc-S-6.5		1455	soil	4°C	1				X	
	995Y-SWbc-S-10		1500	soil	4°C	1				X	
	995Y-SWbc-W-14.8	↓	1505	water	HNO_3	1				X	

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/4/99 1615 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

FINAL PRELIMINARY ASSESSMENT/SAMPLING REPORT

Volume 6 of 6
Appendix O - Part 3 and Appendix P

171 GROUP B AREAS OF CONCERN
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA

U. S. NAVY CONTRACT NUMBER: N68711-96-D-2029
DELIVERY ORDER: 014

Prepared for:

DEPARTMENT OF THE NAVY
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132

Prepared by:

CDM FEDERAL PROGRAMS CORPORATION
3760 Convoy Street, Suite 210
San Diego, California 92111

14 April 2000

Data Validation Reports
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
VOLUME 4 of 6				
98-3364	2941B1	6/9/98	Metals	Metals
98-3365	2941C1	6/10/98	Volatiles	VOCs
98-3365	2941C2	6/10/98	Semivolatiles	SVOCs
98-3365	2941C3	6/10/98	Polychlorinated Biphenyls	PCBs
98-3365	2941C6	6/10/98	Wet Chemistry	pH
98-3365	2941C7	6/10/98	TPH-Gasoline	TPH-Gasoline
98-3365	2941C8	6/10/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A1	6/11/98	Volatiles	VOCs
98-3406	3048A2	6/11/98	Semivolatiles	SVOCs
98-3406	3048A3	6/11/98	Polychlorinated Biphenyls	PCBs
98-3406	3048A4	6/11/98	Metals	Metals
98-6314	3715A4	6/11/98	Tin	Tin
98-3406	3048A7	6/11/98	TPH-Gasoline	TPH-Gasoline
98-3406	3048A8	6/11/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3406	3048A16	6/11/98	Cyanide	CN
98-3406	3048A28	6/11/98	Hexavalent Chromium	Cr^{+6}
98-3406	3048A6	6/11/98	pH	pH
98-3459	3048B1	6/16/98	Volatiles	VOCs
98-3459	3048B2	6/16/98	Semivolatiles	SVOCs
98-3459	3048B4	6/16/98	Metals	Metals
98-3459	3048B3	6/16/98	Polychlorinated Biphenyls	PCBs
98-3459	3048B7	6/16/98	TPH-Gasoline	TPH-Gasoline
98-3459	3048B8	6/16/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3459	3048B16	6/16/98	Cyanide	CN
98-3459	3048B28	6/16/98	Hexavalent Chromium	Cr^{+6}
98-3459	3048B6	6/16/98	pH	pH
98-3466	3048C1	6/17/98	Volatiles	VOCs
98-3466	3048C2	6/17/98	Semivolatiles	SVOCs
98-3466	3048C4	6/17/98	Metals	Metals
98-3466	3048C3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3467	3048D3	6/17/98	Polychlorinated Biphenyls	PCBs
98-3466	3048C7	6/17/98	TPH-Gasoline	TPH-Gasoline
98-3466	3048C8	6/17/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3466	3048C16	6/17/98	Cyanide	CN

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
98-3466	3048C28	6/17/98	Hexavalent Chromium	Cr^{+6}
98-3466	3048C6	6/17/98	pH	pH
98-3473	3048E1	6/18/98	Volatiles	VOCs
98-3473	3048E2	6/18/98	Semivolatiles	SVOCs
98-3473	3048E4	6/18/98	Metals	Metals
98-3473	3048E3	6/18/98	Polychlorinated Biphenyls	PCBs
98-3473	3048E7	6/18/98	TPH-Gasoline	TPH-Gasoline
98-3473	3048E8	6/18/98	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
98-3473	3048E16	6/18/98	Cyanide	CN
98-3473	3048E6	6/18/98	pH	pH
47515A	3715K21	12/15/98	Dioxins/Dibenzofurans	Dioxins
47515B	3715L21	12/15/98	Dioxins/Dibenzofurans	Dioxins
VOLUME 5 of 6				
99-2007	3715B1	2/23-24/99	Volatiles	VOCs
99-2007	3715B2	2/23-2/23-24/99	Semivolatiles	SVOCs
99-2007	3715B3	2/23-24/99	Polychlorinated Biphenyls	PCBs
99-2007	3715B7	2/23-24/99	TPH-Gasoline	TPH-Gasoline
99-2007	3715B8	2/23-24/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2007	3715B4	2/23-24/99	Metals	Metals
99-2007	3715B6	2/23-24/99	Wet Chemistry	pH
99-2065	3715C1	2/25/99	Volatiles	VOCs
99-2065	3715C2	2/25/99	Semivolatiles	SVOCs
99-2065	3715C3	2/25/99	Polychlorinated Biphenyls	PCBs
99-2065	3715C8	2/25/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2065	3715C4	2/25/99	Metals	Metals
99-2065	3715C6	2/25/99	pH	pH
99-2110	3715D1	2/26/99	Volatiles	VOCs
99-2110	3715D2	2/26/99	Semivolatiles	SVOCs
99-2110	3715D3	2/26/99	Polychlorinated Biphenyls	PCBs
99-2110	3715D7	2/26/99	TPH-Gasoline	TPH-Gasoline
99-2110	3715D8	2/26/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2110	3715D4	2/26/99	Metals	Metals
99-2110	3715D6	2/26/99	pH	pH
99-2139	3715E1	3/1/99	Volatiles	VOCs
99-2139	3715E2	3/1/99	Semivolatiles	SVOCs

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2139	3715E3	3/1/99	Polychlorinated Biphenyls	PCBs
99-2139	3715E7	3/1/99	TPH-Gasoline	TPH-Gasoline
99-2139	3715E8	3/1/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2139	3715E4	3/1/99	Metals	Metals
99-2139	3715E6	3/1/99	pH	pH
99-2178	3715F1	3/2/99	Volatiles	VOCs
99-2178	3715F2	3/2/99	Semivolatiles	SVOCs
99-2178	3715F3	3/2/99	Polychlorinated Biphenyls	PCBs
99-2178	3715F7	3/2/99	TPH-Gasoline	TPH-Gasoline
99-2178	3715F8	3/2/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2178	3715F4	3/2/99	Metals	Metals
99-2178	3715F6	3/2/99	Wet Chemistry	pH
99-2216	3715G2	3/3/99	Semivolatiles	SVOCs
99-2216	3715G8	3/3/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2216	3715G4	3/3/99	Metals	Metals
99-2216	3715G6	3/3/99	pH	pH
99-2224	3715H2	3/4/99	Semivolatiles	SVOCs
99-2224	3715H8	3/4/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2224	3715H4	3/4/99	Metals	Metals
99-2224	3715H6	3/4/99	pH	pH
VOLUME 6 of 6				
99-2302	3715I1	3/5/99	Volatiles	VOCs
99-2302	3715I2	3/5/99	Semivolatiles	SVOCs
99-2302	3715I3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2302	3715I8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2302	3715I4	3/5/99	Metals	Metals
99-2302	3715I6	3/5/99	pH	pH
99-2692	3749A1	3/5/99	Volatiles	VOCs
99-2692	3749A2	3/5/99	Semivolatiles	SVOCs
99-2692	3749A3	3/5/99	Polychlorinated Biphenyls	PCBs
99-2692	3749A8	3/5/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2692	3749A6	3/5/99	pH	pH
99-2329	3715J1	3/8/99	Volatiles	VOCs
99-2329	3715J2	3/8/99	Semivolatiles	SVOCs
99-2329	3715J7	3/8/99	TPH-Gasoline	TPH-Gasoline

Data Validation Reports (continued)
Table of Contents

Sample Delivery Group (SDG) No.	Laboratory Data Consultants (LDC) Report No.	Sampling Date	Analytical Category (LDC Designation)	Analytical Category (CDM Federal Designation)
99-2329	3715J8	3/8/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2329	3715J4	3/8/99	Metals	Metals
99-2329	3715J6	3/8/99	pH	pH
99-2367	3722B1	3/9/99	Volatiles	VOCs
99-2367	3722B2	3/9/99	Semivolatiles	SVOCs
99-2367	3722A3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B3	3/9/99	Polychlorinated Biphenyls	PCBs
99-2367	3722B7	3/9/99	TPH-Gasoline	TPH-Gasoline
99-2367	3722B8	3/9/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2367	3722B4	3/9/99	Metals	Metals
99-2367	3722B6	3/9/99	Wet Chemistry	pH
99-2392	3722C1	3/10/99	Volatiles	VOCs
99-2392	3722C2	3/10/99	Semivolatiles	SVOCs
99-2392	3722C7	3/10/99	TPH-Gasoline	TPH-Gasoline
99-2392	3722C8	3/10/99	TPH-Extractables	TPH-Diesel, TPH-Motor Oil
99-2392	3722C4	3/10/99	Metals	Metals
99-2392	3722C6	3/10/99	pH	pH

Notes:

CDM = Camp, Dresser & McKee
CN = Cyanide
Cr^{+6} = Hexavalent Chromium
LDC = Laboratory Data Consultants
No. = Number
PCBs = Polychlorinated Biphenyls
SDG = Sample Delivery Group
SVOCs = Semivolatile Organic Compounds
TPH = Total Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-BT1t-W-10
99SY-HI9a-S-1
99SY-HI9a-W-5
99SY-HI9b-S-1
99SY-HI9b-W-6.0
99SY-M1Dc-S-2
99SY-M1Dc-W-11
99SY-US4c-S-9
99SY-US4c-W-10.2**
99SY-US4d-S-9**
99SY-US4d-W-8**
99SY-US4e-S-9
99SY-US4e-W-12
99SY-US4g-S-1
99SY-US4h-S-3
99SY-US4k-S-9
99SY-US4k-W-10.2
99SY-US4h-S-3MS
99SY-US4h-S-3MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 11 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/15/99	1,1,2,2-Tetrachloroethane	27.4	99SY-HI9b-S-1 99SY-US4e-S-9	J	A
3/11/99	Vinyl chloride	20.7 (≤20)	99SY-HI9a-S-1 99SY-M1Dc-S-2 99SY-US4c-S-9 99SY-US4d-S-9** 99SY-US4g-S-1 99SY-US4h-S-3 99SY-US4k-S-9 99SY-US4h-S-3MS 99SY-US4h-S-3MSD 99G1891-MB-01	J	P

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1t-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1t-W-10	3/5/99	Chloroform	11 ug/L	All samples in SDG 99-2302

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-HI9b-W-6.0	Chloroform	0.7 ug/L	5U ug/L
99SY-M1Dc-W-11	Chloroform	1 ug/L	5U ug/L
99SY-US4c-W-10.2**	Chloroform	0.7 ug/L	5U ug/L
99SY-US4d-W-8**	Chloroform	2 ug/L	5U ug/L
99SY-US4k-W-10.2	Chloroform	1 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-US4c-S-9 and 99SY-US4k-S-9 and samples 99SY-US4c-W-10.2** and 99SY-US4k-W-10.2 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-US4c-W-10.2**	99SY-US4k-W-10.2			
Chloroform	0.7	1	35 (≤20)	J	A
cis-1,2-Dichloroethene	0.5	5U	200 (≤20)	J	A

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2302

SDG	Sample	Compound	Flag	A or P	Reason
99-2302	99SY-HI9b-S-1 99SY-US4e-S-9	1,1,2,2-Tetrachloroethane	J	A	Continuing calibration (%D)
99-2302	99SY-HI9a-S-1 99SY-M1Dc-S-2 99SY-US4c-S-9 99SY-US4d-S-9** 99SY-US4g-S-1 99SY-US4h-S-3 99SY-US4k-S-9	Vinyl chloride	J	P	Continuing calibration (%D)
99-2302	99SY-US4c-W-10.2** 99SY-US4k-W-10.2	Chloroform cis-1,2-Dichloroethene	J J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2302

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2302	99SY-HI9b-W-6.0	Chloroform	5U ug/L	A
99-2302	99SY-M1Dc-W-11	Chloroform	5U ug/L	A
99-2302	99SY-US4c-W-10.2**	Chloroform	5U ug/L	A
99-2302	99SY-US4d-W-8**	Chloroform	5U ug/L	A
99-2302	99SY-US4k-W-10.2	Chloroform	5U ug/L	A

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-9	Received Date:	03/05/1999
Sample ID:	**99SY-BT1T-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	02:26
Data File Name:	2302-09	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	11	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	101
2	Dibromofluoromethane	1868-53-7	79-120	109
3	1,2-Dichloroethane-d4	17060-07-0	81-119	100
4	Toluene-d8	2037-26-5	81-118	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	89
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	95
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-10	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-S-1**	Sample Matrix	Soil	Moisture %:	4.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	07:38
Data File Name:	2302-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	U
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	92
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	60
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	62
3	Fluorobenzene	462-06-6	50-200	60
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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11/18/99

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-11	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	02:59
Data File Name:	2302-11	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	95
2	Dibromofluoromethane	1868-53-7	79-120	104
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	100
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-12	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-S-1**	Sample Matrix	Soil	Moisture %:	10.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	11:45
Data File Name:	2302-12A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U
60	Xylenes (total)	1330-20-7	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	93
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	84
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	103
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
3	Fluorobenzene	462-06-6	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-13	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-W-6.0**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	03:32
Data File Name:	2302-13	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~U~~	~~J~~ SU
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	97
2	Dibromofluoromethane	1868-53-7	79-120	107
3	1,2-Dichloroethane-d4	17060-07-0	81-119	105
4	Toluene-d8	2037-26-5	81-118	103
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	98
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-14	Received Date:	03/05/1999
Sample ID:	**99SY-M1DC-S-2**	Sample Matrix	Soil	Moisture %:	6.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	08:39
Data File Name:	2302-14	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.4	< 5.4	U
2	Bromobenzene	108-86-1	µg/kg	5.4	< 5.4	U
3	Bromochloromethane	74-97-5	µg/kg	5.4	< 5.4	U
4	Bromodichloromethane	75-27-4	µg/kg	5.4	< 5.4	U
5	Bromoform	75-25-2	µg/kg	5.4	< 5.4	U
6	Bromomethane	74-83-9	µg/kg	5.4	< 5.4	U
7	n-Butylbenzene	104-51-8	µg/kg	5.4	< 5.4	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.4	< 5.4	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.4	< 5.4	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.4	< 5.4	U
11	Chlorobenzene	108-90-7	µg/kg	5.4	< 5.4	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.4	< 5.4	U
13	Chloroethane	75-00-3	µg/kg	5.4	< 5.4	U
14	Chloroform	67-66-3	µg/kg	5.4	< 5.4	U
15	Chloromethane	74-87-3	µg/kg	5.4	< 5.4	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.4	< 5.4	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.4	< 5.4	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.4	< 5.4	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.4	< 5.4	U
20	Dibromomethane	74-95-3	µg/kg	5.4	< 5.4	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.4	< 5.4	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.4	< 5.4	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.4	< 5.4	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.4	< 5.4	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.4	< 5.4	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.4	< 5.4	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.4	< 5.4	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.4	< 5.4	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.4	< 5.4	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.4	< 5.4	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.4	< 5.4	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.4	< 5.4	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.4	< 5.4	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.4	< 5.4	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.4	< 5.4	U
36	Ethylbenzene	100-41-4	µg/kg	5.4	< 5.4	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.4	< 5.4	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.4	< 5.4	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.4	< 5.4	U

12950

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.4	< 5.4	U
41	Naphthalene	91-20-3	µg/kg	5.4	< 5.4	U
42	n-Propylbenzene	103-65-1	µg/kg	5.4	< 5.4	U
43	Styrene	100-42-5	µg/kg	5.4	< 5.4	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.4	< 5.4	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.4	< 5.4	U
46	Tetrachloroethene	127-18-4	µg/kg	5.4	< 5.4	U
47	Toluene	108-88-3	µg/kg	5.4	< 5.4	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.4	< 5.4	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.4	< 5.4	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.4	< 5.4	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.4	< 5.4	U
52	Trichloroethene	79-01-6	µg/kg	5.4	< 5.4	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.4	< 5.4	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.4	< 5.4	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.4	< 5.4	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.4	< 5.4	U
57	Vinyl chloride	75-01-4	µg/kg	5.4	< 5.4	UJ
58	o-Xylene	95-47-6	µg/kg	5.4	< 5.4	U
59	m/p-Xylene	108-38-3	µg/kg	5.4	< 5.4	U
60	Xylenes (total)	1330-20-7	µg/kg	5.4	< 5.4	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	92
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	92
4	Toluene-d8	2037-26-5	80-119	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	59
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	62
3	Fluorobenzene	462-06-6	50-200	59
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12951

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-15	Received Date:	03/05/1999
Sample ID:	**99SY-M1DC-W-11**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	04:05
Data File Name:	2302-15	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~1~~	~~J~~ 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	97
2	Dibromofluoromethane	1868-53-7	79-120	104
3	1,2-Dichloroethane-d4	17060-07-0	81-119	101
4	Toluene-d8	2037-26-5	81-118	100
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12955

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-24	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	09:10
Data File Name:	2302-24	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	U
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	< 5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	< 5.7	U
42	n-Propylbenzene	103-65-1	µg/kg	5.7	< 5.7	U
43	Styrene	100-42-5	µg/kg	5.7	< 5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	< 5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	< 5.7	U
46	Tetrachloroethene	127-18-4	µg/kg	5.7	< 5.7	U
47	Toluene	108-88-3	µg/kg	5.7	< 5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	< 5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	< 5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	< 5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	< 5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	< 5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	< 5.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	< 5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	< 5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	< 5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	< 5.7	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.7	< 5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	< 5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	< 5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	90
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	93
4	Toluene-d8	2037-26-5	80-119	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	68
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	71
3	Fluorobenzene	462-06-6	50-200	66
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-25	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-W-10.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	04:38
Data File Name:	2302-25	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	0.7	J 5UJ
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	0.5	J J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	94
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	103
4	Toluene-d8	2037-26-5	81-118	100
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-26	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-S-9**	Sample Matrix	Soil	Moisture %:	9.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	09:40
Data File Name:	2302-26	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	97
3	1,2-Dichloroethane-d4	17060-07-0	75-129	98
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	66
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	67
3	Fluorobenzene	462-06-6	50-200	63
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-27	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-W-8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	05:11
Data File Name:	2302-27	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~2~~	~~J~~ SH
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	1	J
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	97
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	99
4	Toluene-d8	2037-26-5	81-118	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	97
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	107
3	Fluorobenzene	462-06-6	50-200	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-28	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	12:16
Data File Name:	2302-28A	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	U
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	< 5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	< 5.7	U
42	n-Propylbenzene	103-65-1	µg/kg	5.7	< 5.7	U
43	Styrene	100-42-5	µg/kg	5.7	< 5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	< 5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	< 5.7	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.7	< 5.7	U
47	Toluene	108-88-3	µg/kg	5.7	< 5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	< 5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	< 5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	< 5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	< 5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	< 5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	< 5.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	< 5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	< 5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	< 5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	< 5.7	U
58	o-Xylene	95-47-6	µg/kg	5.7	< 5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	< 5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	< 5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	94
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	85
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
3	Fluorobenzene	462-06-6	50-200	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-29	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	05:44
Data File Name:	2302-29	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	1	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	99
2	Dibromofluoromethane	1868-53-7	79-120	108
3	1,2-Dichloroethane-d4	17060-07-0	81-119	107
4	Toluene-d8	2037-26-5	81-118	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-30	Received Date:	03/05/1999
Sample ID:	**99SY-US4G-S-1**	Sample Matrix	Soil	Moisture %:	12.1
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	10:42
Data File Name:	2302-30	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.7	< 5.7	U
2	Bromobenzene	108-86-1	µg/kg	5.7	< 5.7	U
3	Bromochloromethane	74-97-5	µg/kg	5.7	< 5.7	U
4	Bromodichloromethane	75-27-4	µg/kg	5.7	< 5.7	U
5	Bromoform	75-25-2	µg/kg	5.7	< 5.7	U
6	Bromomethane	74-83-9	µg/kg	5.7	< 5.7	U
7	n-Butylbenzene	104-51-8	µg/kg	5.7	< 5.7	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.7	< 5.7	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.7	< 5.7	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.7	< 5.7	U
11	Chlorobenzene	108-90-7	µg/kg	5.7	< 5.7	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.7	< 5.7	U
13	Chloroethane	75-00-3	µg/kg	5.7	< 5.7	U
14	Chloroform	67-66-3	µg/kg	5.7	< 5.7	U
15	Chloromethane	74-87-3	µg/kg	5.7	< 5.7	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.7	< 5.7	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.7	< 5.7	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.7	< 5.7	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.7	< 5.7	U
20	Dibromomethane	74-95-3	µg/kg	5.7	< 5.7	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.7	< 5.7	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.7	< 5.7	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.7	< 5.7	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.7	< 5.7	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.7	< 5.7	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.7	< 5.7	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.7	< 5.7	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.7	< 5.7	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.7	< 5.7	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.7	< 5.7	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.7	< 5.7	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.7	< 5.7	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.7	< 5.7	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.7	< 5.7	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.7	< 5.7	U
36	Ethylbenzene	100-41-4	µg/kg	5.7	< 5.7	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.7	< 5.7	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.7	< 5.7	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.7	< 5.7	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.7	< 5.7	U
41	Naphthalene	91-20-3	µg/kg	5.7	< 5.7	U
42	n-Propylbenzene	103-65-1	µg/kg	5.7	< 5.7	U
43	Styrene	100-42-5	µg/kg	5.7	< 5.7	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.7	< 5.7	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.7	< 5.7	U
46	Tetrachloroethene	127-18-4	µg/kg	5.7	< 5.7	U
47	Toluene	108-88-3	µg/kg	5.7	< 5.7	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.7	< 5.7	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.7	< 5.7	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.7	< 5.7	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.7	< 5.7	U
52	Trichloroethene	79-01-6	µg/kg	5.7	< 5.7	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.7	< 5.7	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.7	< 5.7	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.7	< 5.7	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.7	< 5.7	U
57	Vinyl chloride	75-01-4	µg/kg	5.7	< 5.7	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.7	< 5.7	U
59	m/p-Xylene	108-38-3	µg/kg	5.7	< 5.7	U
60	Xylenes (total)	1330-20-7	µg/kg	5.7	< 5.7	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	94
4	Toluene-d8	2037-26-5	80-119	93
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	63
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	61
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-31	Received Date:	03/05/1999
Sample ID:	**99SY-US4H-S-3**	Sample Matrix	Soil	Moisture %:	0.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	11:43
Data File Name:	2302-31	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.0	< 5.0	U
2	Bromobenzene	108-86-1	µg/kg	5.0	< 5.0	U
3	Bromochloromethane	74-97-5	µg/kg	5.0	< 5.0	U
4	Bromodichloromethane	75-27-4	µg/kg	5.0	< 5.0	U
5	Bromoform	75-25-2	µg/kg	5.0	< 5.0	U
6	Bromomethane	74-83-9	µg/kg	5.0	< 5.0	U
7	n-Butylbenzene	104-51-8	µg/kg	5.0	< 5.0	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.0	< 5.0	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.0	< 5.0	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.0	< 5.0	U
11	Chlorobenzene	108-90-7	µg/kg	5.0	< 5.0	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.0	< 5.0	U
13	Chloroethane	75-00-3	µg/kg	5.0	< 5.0	U
14	Chloroform	67-66-3	µg/kg	5.0	< 5.0	U
15	Chloromethane	74-87-3	µg/kg	5.0	< 5.0	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.0	< 5.0	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.0	< 5.0	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.0	< 5.0	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.0	< 5.0	U
20	Dibromomethane	74-95-3	µg/kg	5.0	< 5.0	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.0	< 5.0	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.0	< 5.0	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.0	< 5.0	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.0	< 5.0	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.0	< 5.0	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.0	< 5.0	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.0	< 5.0	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.0	< 5.0	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.0	< 5.0	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.0	< 5.0	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.0	< 5.0	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.0	< 5.0	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.0	< 5.0	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.0	< 5.0	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.0	< 5.0	U
36	Ethylbenzene	100-41-4	µg/kg	5.0	< 5.0	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.0	< 5.0	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.0	< 5.0	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.0	< 5.0	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.0	< 5.0	U
41	Naphthalene	91-20-3	µg/kg	5.0	< 5.0	U
42	n-Propylbenzene	103-65-1	µg/kg	5.0	< 5.0	U
43	Styrene	100-42-5	µg/kg	5.0	< 5.0	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.0	< 5.0	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.0	< 5.0	U
46	Tetrachloroethene	127-18-4	µg/kg	5.0	< 5.0	U
47	Toluene	108-88-3	µg/kg	5.0	< 5.0	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.0	< 5.0	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.0	< 5.0	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.0	< 5.0	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.0	< 5.0	U
52	Trichloroethene	79-01-6	µg/kg	5.0	< 5.0	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.0	< 5.0	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.0	< 5.0	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.0	< 5.0	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.0	< 5.0	U
57	Vinyl chloride	75-01-4	µg/kg	5.0	< 5.0	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.0	< 5.0	U
59	m/p-Xylene	108-38-3	µg/kg	5.0	< 5.0	U
60	Xylenes (total)	1330-20-7	µg/kg	5.0	< 5.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	93
2	Dibromofluoromethane	1868-53-7	75-124	99
3	1,2-Dichloroethane-d4	17060-07-0	75-129	94
4	Toluene-d8	2037-26-5	80-119	94
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	61
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	64
3	Fluorobenzene	462-06-6	50-200	60
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-32	Received Date:	03/05/1999
Sample ID:	**99SY-US4K-S-9**	Sample Matrix	Soil	Moisture %:	14.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260C	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1891	Prep. No:	–	Anal. Time:	11:12
Data File Name:	2302-32	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	U
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	U
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	U
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

12995

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	< 5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	< 5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	< 5.8	U
43	Styrene	100-42-5	µg/kg	5.8	< 5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	< 5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	< 5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	< 5.8	U
47	Toluene	108-88-3	µg/kg	5.8	< 5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	< 5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	< 5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	< 5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	< 5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	< 5.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	< 5.8	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	< 5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	< 5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	< 5.8	U
57	Vinyl chloride	75-01-4	µg/kg	5.8	< 5.8	~~U~~ UJ
58	o-Xylene	95-47-6	µg/kg	5.8	< 5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	< 5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	< 5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	90
2	Dibromofluoromethane	1868-53-7	75-124	100
3	1,2-Dichloroethane-d4	17060-07-0	75-129	95
4	Toluene-d8	2037-26-5	80-119	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	65
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	68
3	Fluorobenzene	462-06-6	50-200	61
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

12996

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-33	Received Date:	03/05/1999
Sample ID:	**99SY-US4K-W-10.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260C	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	06:17
Data File Name:	2302-33	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	~~1~~	~~J~~ UJ
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	~~U~~ UJ
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	95
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	103
4	Toluene-d8	2037-26-5	81-118	102
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	104
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	112
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13000

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-HI9a-S-1
99SY-HI9a-W-5
99SY-HI9b-S-1
99SY-HI9b-W-6.0
99SY-US4c-S-9
99SY-US4c-W-10.2
99SY-US4d-S-9**
99SY-US4d-W-8**
99SY-US4e-S-9
99SY-US4e-W-12
99SY-US4g-S-1
99SY-US4h-S-3**
99SY-US4k-S-9
99SY-US4k-W-10.2
99SY-US4h-S-3MS
99SY-US4h-S-3MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/14/99	Hexachlorocyclopentadiene	25.4	99SY-HI9a-W-5 99SY-HI9b-W-6.0 99SY-US4c-W-10.2 99SY-US4d-W-8** 99SY-US4e-W-12 99SY-US4k-W-10.2	J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2302	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 99SY-US4c-S-9 and 99SY-US4k-S-9 and samples 99SY-US4c-W-10.2 and 99SY-US4k-W-10.2 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-US4c-W-10.2	99SY-US4k-W-10.2			
Bis(2-ethylhexyl)phthalate	10U	1	200 (≤20)	J	A

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2302

SDG	Sample	Compound	Flag	A or P	Reason
99-2302	99SY-HI9a-W-5 99SY-HI9b-W-6.0 99SY-US4c-W-10.2 99SY-US4d-W-8** 99SY-US4e-W-12 99SY-US4k-W-10.2	Hexachlorocyclopentadiene	J	A	Continuing calibration (%D)
99-2302	99SY-HI9a-W-5 99SY-HI9b-W-6.0 99SY-US4c-W-10.2 99SY-US4d-W-8** 99SY-US4e-W-12 99SY-US4k-W-10.2	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates
99-2302	99SY-US4c-W-10.2 99SY-US4k-W-10.2	Bis(2-ethylhexyl)phthalate	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-10	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-S-1**	Sample Matrix	Soil	Moisture %:	4.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	20:35
Data File Name:	2302-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	54
2	2-Fluorophenol	367-12-4	25-103	50
3	Nitrobenzene-d5	4165-60-0	23-119	54
4	Phenol-d5	4165-62-2	24-112	48
5	Terphenyl-d14	1718-51-0	18-136	53
6	2,4,6-Tribromophenol	118-79-6	20-119	46
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	106
2	Chrysene-d12	1719-03-5	50-200	122
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	108
4	Naphthalene-d8	1146-65-2	50-200	111
5	Perylene-d12	1520-96-3	50-200	104
6	Phenanthrene-d10	1517-22-2	50-200	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13275

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-11	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/14/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	23:44
Data File Name:	2302-11	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	1	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	59
2	2-Fluorophenol	367-12-4	21- 99	45
3	Nitrobenzene-d5	4165-60-0	35-113	63
4	Phenol-d5	4165-62-2	10- 93	36
5	Terphenyl-d14	1718-51-0	33-140	56
6	2,4,6-Tribromophenol	118-79-6	10-122	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	150
2	Chrysene-d12	1719-03-5	50-200	179
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	143
4	Naphthalene-d8	1146-65-2	50-200	151
5	Perylene-d12	1520-96-3	50-200	170
6	Phenanthrene-d10	1517-22-2	50-200	145
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-12	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-S-1**	Sample Matrix	Soil	Moisture %:	10.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	21:14
Data File Name:	2302-12	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	47
2	2-Fluorophenol	367-12-4	25-103	45
3	Nitrobenzene-d5	4165-60-0	23-119	49
4	Phenol-d5	4165-62-2	24-112	44
5	Terphenyl-d14	1718-51-0	18-136	46
6	2,4,6-Tribromophenol	118-79-6	20-119	40
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	123
2	Chrysene-d12	1719-03-5	50-200	141
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	115
4	Naphthalene-d8	1146-65-2	50-200	122
5	Perylene-d12	1520-96-3	50-200	121
6	Phenanthrene-d10	1517-22-2	50-200	132
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-13	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-W-6.0**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/14/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	23:05
Data File Name:	2302-13	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U UJ
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	62
2	2-Fluorophenol	367-12-4	21- 99	46
3	Nitrobenzene-d5	4165-60-0	35-113	64
4	Phenol-d5	4165-62-2	10- 93	36
5	Terphenyl-d14	1718-51-0	33-140	52
6	2,4,6-Tribromophenol	118-79-6	10-122	40
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	129
2	Chrysene-d12	1719-03-5	50-200	143
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	147
4	Naphthalene-d8	1146-65-2	50-200	157
5	Perylene-d12	1520-96-3	50-200	130
6	Phenanthrene-d10	1517-22-2	50-200	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-24	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	02:25
Data File Name:	2302-24	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	570	< 570	U
2	Acenaphthylene	208-96-8	µg/kg	570	< 570	U
3	Anthracene	120-12-7	µg/kg	570	< 570	U
4	Benz(a)anthracene	56-55-3	µg/kg	570	< 570	U
5	Benzo(a)pyrene	50-32-8	µg/kg	570	< 570	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	570	< 570	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	570	< 570	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	570	< 570	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	570	< 570	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	570	< 570	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	570	< 570	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	570	< 570	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	570	< 570	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	570	< 570	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	570	< 570	U
18	2-Chlorophenol	95-57-8	µg/kg	570	< 570	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	570	< 570	U
20	Chrysene	218-01-9	µg/kg	570	< 570	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	570	< 570	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	570	< 570	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	570	< 570	U
24	Dibenzofuran	132-64-9	µg/kg	570	< 570	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	570	< 570	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	570	< 570	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	570	< 570	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	570	< 570	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	570	< 570	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	570	< 570	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	570	< 570	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	570	< 570	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	570	< 570	U
37	Fluoranthene	206-44-0	µg/kg	570	< 570	U
38	Fluorene	86-73-7	µg/kg	570	< 570	U
39	Hexachlorobenzene	118-74-1	µg/kg	570	< 570	U
40	Hexachlorobutadiene	87-68-3	µg/kg	570	< 570	U

13298

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	570	< 570	U
42	Hexachloroethane	67-72-1	µg/kg	570	< 570	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	< 570	U
44	Isophorone	78-59-1	µg/kg	570	< 570	U
45	2-Methylnaphthalene	91-57-6	µg/kg	570	< 570	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	570	< 570	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	570	< 570	U
48	Naphthalene	91-20-3	µg/kg	570	< 570	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	570	< 570	U
53	2-Nitrophenol	88-75-5	µg/kg	570	< 570	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	570	< 570	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	570	< 570	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	570	< 570	U
59	Phenol	108-95-2	µg/kg	570	< 570	U
60	Pyrene	129-00-0	µg/kg	570	< 570	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	570	< 570	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	570	< 570	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	570	< 570	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	54
3	Nitrobenzene-d5	4165-60-0	23-119	61
4	Phenol-d5	4165-62-2	24-112	52
5	Terphenyl-d14	1718-51-0	18-136	56
6	2,4,6-Tribromophenol	118-79-6	20-119	48
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	88
2	Chrysene-d12	1719-03-5	50-200	92
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	120
4	Naphthalene-d8	1146-65-2	50-200	117
5	Perylene-d12	1520-96-3	50-200	80
6	Phenanthrene-d10	1517-22-2	50-200	90
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13299

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-25	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-W-10.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/14/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	22:26
Data File Name:	2302-25	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	~~U~~ UJ
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a.h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	66
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	69
4	Phenol-d5	4165-62-2	10- 93	40
5	Terphenyl-d14	1718-51-0	33-140	57
6	2,4,6-Tribromophenol	118-79-6	10-122	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	103
2	Chrysene-d12	1719-03-5	50-200	124
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	139
4	Naphthalene-d8	1146-65-2	50-200	146
5	Perylene-d12	1520-96-3	50-200	105
6	Phenanthrene-d10	1517-22-2	50-200	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13305

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-26	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-S-9**	Sample Matrix	Soil	Moisture %:	9.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	11:50
Data File Name:	2302-26A	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	57
2	2-Fluorophenol	367-12-4	25-103	51
3	Nitrobenzene-d5	4165-60-0	23-119	57
4	Phenol-d5	4165-62-2	24-112	52
5	Terphenyl-d14	1718-51-0	18-136	58
6	2,4,6-Tribromophenol	118-79-6	20-119	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	90
2	Chrysene-d12	1719-03-5	50-200	109
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	88
4	Naphthalene-d8	1146-65-2	50-200	88
5	Perylene-d12	1520-96-3	50-200	84
6	Phenanthrene-d10	1517-22-2	50-200	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13312

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-27	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-W-8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/15/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	00:22
Data File Name:	2302-27	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	6	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	UJ
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	50
2	2-Fluorophenol	367-12-4	21- 99	40
3	Nitrobenzene-d5	4165-60-0	35-113	56
4	Phenol-d5	4165-62-2	10- 93	27
5	Terphenyl-d14	1718-51-0	33-140	56
6	2,4,6-Tribromophenol	118-79-6	10-122	52
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	154
2	Chrysene-d12	1719-03-5	50-200	187
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	148
4	Naphthalene-d8	1146-65-2	50-200	161
5	Perylene-d12	1520-96-3	50-200	164
6	Phenanthrene-d10	1517-22-2	50-200	155
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13318

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-28	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	12:30
Data File Name:	2302-28A	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	570	< 570	U
2	Acenaphthylene	208-96-8	µg/kg	570	< 570	U
3	Anthracene	120-12-7	µg/kg	570	< 570	U
4	Benz(a)anthracene	56-55-3	µg/kg	570	< 570	U
5	Benzo(a)pyrene	50-32-8	µg/kg	570	< 570	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	570	< 570	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	570	< 570	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	570	< 570	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	570	< 570	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	570	< 570	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	570	< 570	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	570	< 570	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	570	< 570	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	570	< 570	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	570	< 570	U
18	2-Chlorophenol	95-57-8	µg/kg	570	< 570	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	570	< 570	U
20	Chrysene	218-01-9	µg/kg	570	< 570	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	570	< 570	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	570	< 570	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	570	< 570	U
24	Dibenzofuran	132-64-9	µg/kg	570	< 570	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	570	< 570	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	570	< 570	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	570	< 570	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	570	< 570	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	570	< 570	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	570	< 570	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	570	< 570	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	570	< 570	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	570	< 570	U
37	Fluoranthene	206-44-0	µg/kg	570	< 570	U
38	Fluorene	86-73-7	µg/kg	570	< 570	U
39	Hexachlorobenzene	118-74-1	µg/kg	570	< 570	U
40	Hexachlorobutadiene	87-68-3	µg/kg	570	< 570	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	570	< 570	U
42	Hexachloroethane	67-72-1	µg/kg	570	< 570	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	< 570	U
44	Isophorone	78-59-1	µg/kg	570	< 570	U
45	2-Methylnaphthalene	91-57-6	µg/kg	570	< 570	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	570	< 570	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	570	< 570	U
48	Naphthalene	91-20-3	µg/kg	570	< 570	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	570	< 570	U
53	2-Nitrophenol	88-75-5	µg/kg	570	< 570	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	570	< 570	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	570	< 570	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	570	< 570	U
59	Phenol	108-95-2	µg/kg	570	< 570	U
60	Pyrene	129-00-0	µg/kg	570	< 570	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	570	< 570	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	570	< 570	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	570	< 570	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	48
2	2-Fluorophenol	367-12-4	25-103	42
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	24-112	46
5	Terphenyl-d14	1718-51-0	18-136	56
6	2,4,6-Tribromophenol	118-79-6	20-119	54
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	110
2	Chrysene-d12	1719-03-5	50-200	130
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
4	Naphthalene-d8	1146-65-2	50-200	101
5	Perylene-d12	1520-96-3	50-200	72
6	Phenanthrene-d10	1517-22-2	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-29	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/14/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	21:47
Data File Name:	2302-29	Sample Amount:	700. mL	Dilution Factor:	1.44
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	14	< 14	U
2	Acenaphthylene	208-96-8	µg/L	14	< 14	U
3	Anthracene	120-12-7	µg/L	14	< 14	U
4	Benz(a)anthracene	56-55-3	µg/L	14	< 14	U
5	Benzo(a)pyrene	50-32-8	µg/L	14	< 14	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	14	< 14	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	14	< 14	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	14	< 14	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	14	< 14	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	14	< 14	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	14	< 14	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	14	3	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	14	< 14	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	14	3	J
15	4-Chloro-3-methylphenol	59-50-7	µg/L	29	< 29	U
16	4-Chloroaniline	106-47-8	µg/L	29	< 29	U
17	2-Chloronaphthalene	91-58-7	µg/L	14	< 14	U
18	2-Chlorophenol	95-57-8	µg/L	14	< 14	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	14	< 14	U
20	Chrysene	218-01-9	µg/L	14	< 14	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	14	< 14	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	14	< 14	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	14	< 14	U
24	Dibenzofuran	132-64-9	µg/L	14	< 14	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	14	< 14	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	14	< 14	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	14	< 14	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	14	< 14	U
29	2,4-Dichlorophenol	120-83-2	µg/L	14	< 14	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	14	< 14	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	14	< 14	U
32	2,4-Dimethylphenol	105-67-9	µg/L	14	< 14	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	72	< 72	U
34	2,4-Dinitrophenol	51-28-5	µg/L	72	< 72	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	14	< 14	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	14	< 14	U
37	Fluoranthene	206-44-0	µg/L	14	< 14	U
38	Fluorene	86-73-7	µg/L	14	< 14	U
39	Hexachlorobenzene	118-74-1	µg/L	14	< 14	U
40	Hexachlorobutadiene	87-68-3	µg/L	14	< 14	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	14	< 14	U UJ
42	Hexachloroethane	67-72-1	µg/L	14	< 14	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	14	< 14	U
44	Isophorone	78-59-1	µg/L	14	< 14	U
45	2-Methylnaphthalene	91-57-6	µg/L	14	< 14	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	14	< 14	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	14	< 14	U
48	Naphthalene	91-20-3	µg/L	14	< 14	U
49	2-Nitroaniline	88-74-4	µg/L	72	< 72	U
50	3-Nitroaniline	99-09-2	µg/L	72	< 72	U
51	4-Nitroaniline	100-01-6	µg/L	72	< 72	U
52	Nitrobenzene	98-95-3	µg/L	14	< 14	U
53	2-Nitrophenol	88-75-5	µg/L	14	< 14	U
54	4-Nitrophenol	100-02-7	µg/L	72	< 72	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	14	< 14	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	14	< 14	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	72	< 72	U
58	Phenanthrene	85-01-8	µg/L	14	< 14	U
59	Phenol	108-95-2	µg/L	14	< 14	U
60	Pyrene	129-00-0	µg/L	14	< 14	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	14	< 14	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	14	< 14	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	14	< 14	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	61
2	2-Fluorophenol	367-12-4	21- 99	54
3	Nitrobenzene-d5	4165-60-0	35-113	69
4	Phenol-d5	4165-62-2	10- 93	41
5	Terphenyl-d14	1718-51-0	33-140	66
6	2,4,6-Tribromophenol	118-79-6	10-122	60
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	112
2	Chrysene-d12	1719-03-5	50-200	135
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	124
4	Naphthalene-d8	1146-65-2	50-200	130
5	Perylene-d12	1520-96-3	50-200	119
6	Phenanthrene-d10	1517-22-2	50-200	112
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-30	Received Date:	03/05/1999
Sample ID:	**99SY-US4G-S-1**	Sample Matrix	Soil	Moisture %:	12.1
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	03:04
Data File Name:	2302-30	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	570	< 570	U
2	Acenaphthylene	208-96-8	µg/kg	570	< 570	U
3	Anthracene	120-12-7	µg/kg	570	< 570	U
4	Benz(a)anthracene	56-55-3	µg/kg	570	< 570	U
5	Benzo(a)pyrene	50-32-8	µg/kg	570	< 570	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	570	< 570	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	570	< 570	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	570	< 570	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	570	< 570	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	570	< 570	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	570	< 570	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	570	< 570	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	570	< 570	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	570	< 570	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	570	< 570	U
18	2-Chlorophenol	95-57-8	µg/kg	570	< 570	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	570	< 570	U
20	Chrysene	218-01-9	µg/kg	570	< 570	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	570	< 570	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	570	< 570	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	570	< 570	U
24	Dibenzofuran	132-64-9	µg/kg	570	< 570	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	570	< 570	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	570	< 570	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	570	< 570	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	570	< 570	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	570	< 570	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	570	< 570	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	570	< 570	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	570	< 570	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	570	< 570	U
37	Fluoranthene	206-44-0	µg/kg	570	< 570	U
38	Fluorene	86-73-7	µg/kg	570	< 570	U
39	Hexachlorobenzene	118-74-1	µg/kg	570	< 570	U
40	Hexachlorobutadiene	87-68-3	µg/kg	570	< 570	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	570	< 570	U
42	Hexachloroethane	67-72-1	µg/kg	570	< 570	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	570	< 570	U
44	Isophorone	78-59-1	µg/kg	570	< 570	U
45	2-Methylnaphthalene	91-57-6	µg/kg	570	< 570	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	570	< 570	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	570	< 570	U
48	Naphthalene	91-20-3	µg/kg	570	< 570	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	570	< 570	U
53	2-Nitrophenol	88-75-5	µg/kg	570	< 570	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	570	< 570	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	570	< 570	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	570	< 570	U
59	Phenol	108-95-2	µg/kg	570	< 570	U
60	Pyrene	129-00-0	µg/kg	570	< 570	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	570	< 570	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	570	< 570	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	570	< 570	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	55
2	2-Fluorophenol	367-12-4	25-103	47
3	Nitrobenzene-d5	4165-60-0	23-119	54
4	Phenol-d5	4165-62-2	24-112	48
5	Terphenyl-d14	1718-51-0	18-136	59
6	2,4,6-Tribromophenol	118-79-6	20-119	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	118
2	Chrysene-d12	1719-03-5	50-200	131
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	108
4	Naphthalene-d8	1146-65-2	50-200	117
5	Perylene-d12	1520-96-3	50-200	111
6	Phenanthrene-d10	1517-22-2	50-200	128
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-31	Received Date:	03/05/1999
Sample ID:	**99SY-US4H-S-3**	Sample Matrix	Soil	Moisture %:	0.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	13:09
Data File Name:	2302-31	Sample Amount:	30.0 g	Dilution Factor:	4
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2000	< 2000	U
2	Acenaphthylene	208-96-8	µg/kg	2000	< 2000	U
3	Anthracene	120-12-7	µg/kg	2000	< 2000	U
4	Benz(a)anthracene	56-55-3	µg/kg	2000	< 2000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2000	< 2000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2000	< 2000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2000	< 2000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2000	< 2000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2000	< 2000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2000	< 2000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2000	< 2000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2000	1200	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2000	< 2000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2000	< 2000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4000	< 4000	U
16	4-Chloroaniline	106-47-8	µg/kg	4000	< 4000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2000	< 2000	U
18	2-Chlorophenol	95-57-8	µg/kg	2000	< 2000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2000	< 2000	U
20	Chrysene	218-01-9	µg/kg	2000	< 2000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2000	< 2000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2000	260	J
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2000	< 2000	U
24	Dibenzofuran	132-64-9	µg/kg	2000	< 2000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2000	< 2000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2000	< 2000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2000	< 2000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4000	< 4000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2000	< 2000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2000	< 2000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2000	< 2000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2000	< 2000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	10000	< 10000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	10000	< 10000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2000	< 2000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2000	< 2000	U
37	Fluoranthene	206-44-0	µg/kg	2000	< 2000	U
38	Fluorene	86-73-7	µg/kg	2000	< 2000	U
39	Hexachlorobenzene	118-74-1	µg/kg	2000	< 2000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2000	< 2000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2000	< 2000	U
42	Hexachloroethane	67-72-1	µg/kg	2000	< 2000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2000	< 2000	U
44	Isophorone	78-59-1	µg/kg	2000	< 2000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2000	< 2000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2000	< 2000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2000	< 2000	U
48	Naphthalene	91-20-3	µg/kg	2000	< 2000	U
49	2-Nitroaniline	88-74-4	µg/kg	10000	< 10000	U
50	3-Nitroaniline	99-09-2	µg/kg	10000	< 10000	U
51	4-Nitroaniline	100-01-6	µg/kg	10000	< 10000	U
52	Nitrobenzene	98-95-3	µg/kg	2000	< 2000	U
53	2-Nitrophenol	88-75-5	µg/kg	2000	< 2000	U
54	4-Nitrophenol	100-02-7	µg/kg	10000	< 10000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2000	< 2000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2000	< 2000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	10000	< 10000	U
58	Phenanthrene	85-01-8	µg/kg	2000	< 2000	U
59	Phenol	108-95-2	µg/kg	2000	< 2000	U
60	Pyrene	129-00-0	µg/kg	2000	< 2000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2000	< 2000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2000	< 2000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2000	< 2000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	61
2	2-Fluorophenol	367-12-4	25-103	31
3	Nitrobenzene-d5	4165-60-0	23-119	51
4	Phenol-d5	4165-62-2	24-112	42
5	Terphenyl-d14	1718-51-0	18-136	77
6	2,4,6-Tribromophenol	118-79-6	20-119	51
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	98
2	Chrysene-d12	1719-03-5	50-200	107
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	92
5	Perylene-d12	1520-96-3	50-200	52
6	Phenanthrene-d10	1517-22-2	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-32	Received Date:	03/05/1999
Sample ID:	**99SY-US4K-S-9**	Sample Matrix	Soil	Moisture %:	14.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	01:47
Data File Name:	2302-32	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	580	< 580	U
2	Acenaphthylene	208-96-8	µg/kg	580	< 580	U
3	Anthracene	120-12-7	µg/kg	580	< 580	U
4	Benz(a)anthracene	56-55-3	µg/kg	580	< 580	U
5	Benzo(a)pyrene	50-32-8	µg/kg	580	< 580	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	580	< 580	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	580	< 580	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	580	< 580	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	580	< 580	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	580	< 580	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	580	< 580	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	580	< 580	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	580	< 580	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	580	< 580	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	580	< 580	U
18	2-Chlorophenol	95-57-8	µg/kg	580	< 580	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	580	< 580	U
20	Chrysene	218-01-9	µg/kg	580	< 580	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	580	< 580	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	580	< 580	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	580	< 580	U
24	Dibenzofuran	132-64-9	µg/kg	580	< 580	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	580	< 580	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	580	< 580	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	580	< 580	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	580	< 580	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	580	< 580	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	580	< 580	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	580	< 580	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2900	< 2900	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2900	< 2900	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	580	< 580	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	580	< 580	U
37	Fluoranthene	206-44-0	µg/kg	580	< 580	U
38	Fluorene	86-73-7	µg/kg	580	< 580	U
39	Hexachlorobenzene	118-74-1	µg/kg	580	< 580	U
40	Hexachlorobutadiene	87-68-3	µg/kg	580	< 580	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	580	< 580	U
42	Hexachloroethane	67-72-1	µg/kg	580	< 580	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	580	< 580	U
44	Isophorone	78-59-1	µg/kg	580	< 580	U
45	2-Methylnaphthalene	91-57-6	µg/kg	580	< 580	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	580	< 580	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	580	< 580	U
48	Naphthalene	91-20-3	µg/kg	580	< 580	U
49	2-Nitroaniline	88-74-4	µg/kg	2900	< 2900	U
50	3-Nitroaniline	99-09-2	µg/kg	2900	< 2900	U
51	4-Nitroaniline	100-01-6	µg/kg	2900	< 2900	U
52	Nitrobenzene	98-95-3	µg/kg	580	< 580	U
53	2-Nitrophenol	88-75-5	µg/kg	580	< 580	U
54	4-Nitrophenol	100-02-7	µg/kg	2900	< 2900	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	580	< 580	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	580	< 580	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2900	< 2900	U
58	Phenanthrene	85-01-8	µg/kg	580	< 580	U
59	Phenol	108-95-2	µg/kg	580	< 580	U
60	Pyrene	129-00-0	µg/kg	580	< 580	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	580	< 580	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	580	< 580	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	580	< 580	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	57
2	2-Fluorophenol	367-12-4	25-103	49
3	Nitrobenzene-d5	4165-60-0	23-119	55
4	Phenol-d5	4165-62-2	24-112	49
5	Terphenyl-d14	1718-51-0	18-136	55
6	2,4,6-Tribromophenol	118-79-6	20-119	49
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	116
2	Chrysene-d12	1719-03-5	50-200	133
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	118
6	Phenanthrene-d10	1517-22-2	50-200	125
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-33	Received Date:	03/05/1999
Sample ID:	**99SY-US4K-W-10.2**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/10/99	Anal. Date:	03/14/99
Batch No:	99G1875	Prep. No:	1 of 1	Anal. Time:	21:08
Data File Name:	2302-33	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	1	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	U
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	37
2	2-Fluorophenol	367-12-4	21- 99	28
3	Nitrobenzene-d5	4165-60-0	35-113	41
4	Phenol-d5	4165-62-2	10- 93	22
5	Terphenyl-d14	1718-51-0	33-140	60
6	2,4,6-Tribromophenol	118-79-6	10-122	44
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	158
2	Chrysene-d12	1719-03-5	50-200	180
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	140
4	Naphthalene-d8	1146-65-2	50-200	152
5	Perylene-d12	1520-96-3	50-200	172
6	Phenanthrene-d10	1517-22-2	50-200	155
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13365

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-HI9a-S-1
99SY-HI9a-W-5
99SY-HI9b-S-1**
99SY-HI9b-W-6.0
99SY-HI9a-S-1MS
99SY-HI9a-S-1MSD

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 4 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2302	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2302

SDG	Sample	Compound	Flag	A or P	Reason
99-2302	99SY-HI9a-W-5 99SY-HI9b-W-6.0	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

I

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-10	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-S-1**	Sample Matrix	Soil	Moisture %:	4.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1897	Prep. No:	1 of 1	Anal. Time:	16:16
Data File Name:	2302.010	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	53	<53	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	53	<53	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	53	<53	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	53	<53	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	<26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	<26	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	78
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	71
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

13609

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	99 '02	Collected by:	DB/BB
		Lab Sample ID:	99 302-11	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-W-5**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1916	Prep. No:	1 of 1	Anal. Time:	23:30
Data File Name:	2302.111	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	88
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	102
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/16/99

13612

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-12	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-S-1**	Sample Matrix	Soil	Moisture %:	10.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1897	Prep. No:	1 of 1	Anal. Time:	16:40
Data File Name:	2302.012	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	56	<56	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	56	<56	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	56	<56	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	56	<56	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	<28	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	85
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13615

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-13	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-W-6.0**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1916	Prep. No:	1 of 1	Anal. Time:	23:55
Data File Name:	2302.113	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	82
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13618

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-HI9a-S-1
99SY-HI9a-W-5
99SY-HI9b-S-1
99SY-HI9b-W-6.0
99SY-HI9a-S-1MS
99SY-HI9a-S-1MSD

Introduction

This data review covers 4 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

I

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-10	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-S-1**	Sample Matrix	Soil	Moisture %:	4.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/10/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	22:58
Data File Name:	2302.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	2	J
2	Motor oil		mg/kg	11	14	
Surrogates				Control Limit, %	Surro. Rec.%	
1	Octacosane, C_{28}	630-02-4		50-149	129	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11/16/99

13851

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-11	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	00:14
Data File Name:	2302.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	114
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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13853

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-12	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-S-1**	Sample Matrix	Soil	Moisture %:	10.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/10/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	23:23
Data File Name:	2302.012	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

13855

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-13	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-W-6.0**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	00:41
Data File Name:	2302.013	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

13857

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-A13a-S-0**	99SY-SWbf-W-14.6	99SY-US4h-S-3MS
99SY-A13b-S-1**	99SY-US4c-S-9	99SY-US4h-S-3MSD
99SY-A13c-S-1.5	99SY-US4c-W-10.2	99SY-US4h-S-3DUP
99SY-A13e-S-1.5	99SY-US4d-S-9**	
99SY-A14a-S-0**	99SY-US4d-W-8**	
99SY-A14b-S-1**	99SY-US4e-S-9	
99SY-A14c-S-3	99SY-US4e-W-12	
99SY-A14d-S-0	99SY-US4g-S-1	
99SY-HI9a-S-1**	99SY-US4h-S-3**	
99SY-HI9a-W-5	99SY-US4k-S-9	
99SY-HI9b-S-1	99SY-US4k-W-10.2	
99SY-HI9b-W-6.0	99SY-A14b-S-1MS	
99SY-M1Dc-W-11	99SY-A14b-S-1MSD	
99SY-SWbd-S-10	99SY-A14b-S-1DUP	
99SY-SWbd-S-6.5	99SY-HI9a-W-5MS	
99SY-SWbd-W-15	99SY-HI9a-W-5MSD	
99SY-SWbe-S-10	99SY-HI9a-W-5DUP	
99SY-SWbe-S-6.5	99SY-M1Dc-W-11MS	
99SY-SWbe-W-14.6	99SY-M1Dc-W-11MSD	
99SY-SWbf-S-6.5	99SY-M1Dc-W-11DUP	

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 27 soil samples and 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Copper Nickel Silver	0.048 mg/Kg 0.021 mg/Kg 0.017 mg/Kg	All soil samples in SDG 99-2302
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Mercury Nickel Selenium Silver Thallium Vanadium Zinc Molybdenum	2.7 ug/L 3.6 ug/L 3.6 ug/L 0.5 ug/L 0.5 ug/L 1.6 ug/L 1.8 ug/L 2.2 ug/L 0.1 ug/L 2.9 ug/L 2.3 ug/L 0.8 ug/L 3.8 ug/L 1.6 ug/L 2.4 ug/L 2.3 ug/L	All soil samples in SDG 99-2302
PB (prep blank)	Chromium Copper Nickel Silver	0.59 ug/L 0.95 ug/L 0.82 ug/L 0.61 ug/L	All water samples in SDG 99-2302

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Thallium Vanadium Zinc Molybdenum	1.3 ug/L 2.5 ug/L 2.8 ug/L 0.3 ug/L 0.4 ug/L 1.5 ug/L 1.6 ug/L 2.2 ug/L 1.9 ug/L 0.6 ug/L 4.4 ug/L 1.1 ug/L 2.4 ug/L 2.1 ug/L	All water samples in SDG 99-2302

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI9b-S-1	Antimony Cadmium Mercury	0.58 mg/Kg 0.068 mg/Kg 0.063 mg/Kg	0.58U mg/Kg 0.068U mg/Kg 0.063U mg/Kg
99SY-US4c-S-9	Cadmium Mercury	0.11 mg/Kg 0.033 mg/Kg	0.11U mg/Kg 0.033U mg/Kg
99SY-US4d-S-9**	Antimony Molybdenum	0.63 mg/Kg 0.049 mg/Kg	0.63U mg/Kg 0.049U mg/Kg
99SY-US4e-S-9	Antimony Cadmium Mercury	0.55 mg/Kg 0.11 mg/Kg 0.038 mg/Kg	0.55U mg/Kg 0.11U mg/Kg 0.038U mg/Kg
99SY-US4k-S-9	Antimony Cadmium Mercury	0.36 mg/Kg 0.055 mg/Kg 0.024 mg/Kg	0.36U mg/Kg 0.055U mg/Kg 0.024U mg/Kg
99SY-HI9a-W-5	Beryllium Chromium Cobalt Copper Nickel Molybdenum	0.10 ug/L 0.77 ug/L 1.5 ug/L 0.90 ug/L 3.1 ug/L 3.0 ug/L	0.10U ug/L 0.77U ug/L 1.5U ug/L 0.90U ug/L 3.1U ug/L 3.0U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-HI9b-W-6.0	Beryllium	0.14 ug/L	0.14U ug/L
	Cobalt	1.4 ug/L	1.4U ug/L
	Copper	1.0 ug/L	1.0U ug/L
	Nickel	4.3 ug/L	4.3U ug/L
	Molybdenum	4.7 ug/L	4.7U ug/L
99SY-M1Dc-W-11	Chromium	5.3 ug/L	5.3U ug/L
	Cobalt	4.4 ug/L	4.4U ug/L
	Copper	8.8 ug/L	8.8U ug/L
	Nickel	4.9 ug/L	4.9U ug/L
99SY-US4c-W-10.2	Cobalt	1.3 ug/L	1.3U ug/L
	Nickel	2.9 ug/L	2.9U ug/L
	Molybdenum	7.2 ug/L	7.2U ug/L
99SY-US4d-W-8**	Arsenic	4.9 ug/L	4.9U ug/L
	Cobalt	0.81 ug/L	0.81U ug/L
	Copper	1.6 ug/L	1.6U ug/L
	Nickel	6.0 ug/L	6.0U ug/L
	Vanadium	1.5 ug/L	1.5U ug/L
	Zinc	5.5 ug/L	5.5U ug/L
	Molybdenum	6.6 ug/L	6.6U ug/L
99SY-US4e-W-12	Antimony	1.8 ug/L	1.8U ug/L
	Cobalt	3.8 ug/L	3.8U ug/L
	Nickel	1.7 ug/L	1.7U ug/L
	Vanadium	1.9 ug/L	1.9U ug/L
	Molybdenum	1.1 ug/L	1.1U ug/L
99SY-US4k-W-10.2	Cobalt	1.1 ug/L	1.1U ug/L
	Copper	1.6 ug/L	1.6U ug/L
	Nickel	2.6 ug/L	2.6U ug/L
	Molybdenum	6.8 ug/L	6.8U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-A14b-S-1MS/MSD (99SY-A13a-S-0** 99SY-A13b-S-1** 99SY-A13c-S-1.5 99SY-A13e-S-1.5 99SY-A14a-S-0** 99SY-A14b-S-1** 99SY-A14c-S-3 99SY-A14d-S-0 99SY-HI9a-S-1** 99SY-HI9b-S-1 99SY-US4c-S-9 99SY-US4d-S-9** 99SY-US4e-S-9 99SY-US4g-S-1 99SY-US4k-S-9)	Barium Cadmium Lead Nickel Arsenic	155 (75-125) 165 (75-125) 164 (75-125) 167 (75-125) -	- 175 (75-125) 182 (75-125) 182 (75-125) 132 (75-125)	- - - - -	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
99SY-HI9a-W-5MS/MSD (99SY-HI9a-W-5 99SY-HI9b-W-6.0 99SY-M1Dc-W-11 99SY-US4c-W-10.2 99SY-US4d-W-8** 99SY-US4e-W-12 99SY-US4k-W-10.2)	Barium Cobalt Lead Molybdenum Thallium Nickel	74 (75-125) 71 (75-125) 70 (75-125) 74 (75-125) 64 (75-125) 73 (75-125)	73 (75-125) 70 (75-125) 69 (75-125) 73 (75-125) 63 (75-125) 72 (75-125)	- - - - - -	J J J J J J	A
99SY-US4h-S-3MS/MSD (99SY-US4h-S-3**)	Cadmium Lead Selenium	158 (75-125) 209 (75-125) 128 (75-125)	156 (75-125) 210 (75-125) -	- - -	J (all detects) J (all detects) J (all detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 99SY-A13c-S-1.5 and 99SY-A13e-S-1.5, samples 99SY-US4c-S-9 and 99SY-US4k-S-9, and samples 99SY-US4c-W-10.2 and 99SY-US4k-W-10.2 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-A13c-S-1.5	99SY-A13e-S-1.5			
Antimony	9.6	5.3	58 (≤35)	J	A
Arsenic	8.3	5.2	46 (≤35)	J	A
Barium	412	180	78 (≤35)	J	A
Cadmium	3.0	2.1	35 (≤35)	-	-
Chromium	299	140	72 (≤35)	J	A
Cobalt	14.5	7.7	61 (≤35)	J	A
Copper	1010	635	45 (≤35)	J	A
Lead	1090	465	80 (≤35)	J	A
Mercury	1.2	0.69	54 (≤35)	J	A
Nickel	98.0	84.3	15 (≤35)	-	-
Silver	0.24	0.30	22 (≤35)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-A13c-S-1.5	99SY-A13e-S-1.5			
Vanadium	40.4	22.9	55 (≤35)	J	A
Zinc	894	606	38 (≤35)	J	A
Molybdenum	21.9	14.4	41 (≤35)	J	A

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	99SY-US4c-W-10.2	99SY-US4k-W-10.2			
Barium	113	107	5 (≤20)	-	-
Cobalt	1.3	1.1	17 (≤20)	-	-
Copper	0.69U	1.6	200 (≤20)	J	A
Nickel	2.9	2.6	11 (≤20)	-	-
Selenium	6.4	5.5	15 (≤20)	-	-
Molybdenum	7.2	6.8	6 (≤20)	-	-

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-US4c-S-9	99SY-US4k-S-9			
Antimony	0.70	0.36	64 (≤35)	J	A
Arsenic	6.0	2.8	73 (≤35)	J	A
Barium	123	68.9	56 (≤35)	J	A
Cadmium	0.11	0.055	67 (≤35)	J	A
Chromium	23.8	13.3	57 (≤35)	J	A
Cobalt	11.5	7.6	41 (≤35)	J	A
Copper	16.6	9.2	57 (≤35)	J	A

Analyte	Concentration (mg/Kg)		RPD (Limits)	Flag	A or P
	99SY-US4c-S-9	99SY-US4k-S-9			
Lead	4.6	2.6	56 (≤35)	J	A
Mercury	0.033	0.024	32 (≤35)	-	-
Nickel	17.0	10.3	49 (≤35)	J	A
Vanadium	39.7	27.3	37 (≤35)	J	A
Zinc	56.5	33.1	52 (≤35)	J	A

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2302

SDG	Sample	Analyte	Flag	A or P	Reason
99-2302	99SY-A13a-S-0** 99SY-A13b-S-1** 99SY-A13c-S-1.5 99SY-A13e-S-1.5 99SY-A14a-S-0** 99SY-A14b-S-1** 99SY-A14c-S-3 99SY-A14d-S-0 99SY-HI9a-S-1** 99SY-HI9b-S-1 99SY-US4c-S-9 99SY-US4d-S-9** 99SY-US4e-S-9 99SY-US4g-S-1 99SY-US4k-S-9	Barium Cadmium Lead Nickel Arsenic	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2302	99SY-HI9a-W-5 99SY-HI9b-W-6.0 99SY-M1Dc-W-11 99SY-US4c-W-10.2 99SY-US4d-W-8** 99SY-US4e-W-12 99SY-US4k-W-10.2	Barium Cobalt Lead Molybdenum Thallium Nickel	J J J J J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2302	99SY-US4h-S-3**	Cadmium Lead Selenium	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2302	99SY-A13c-S-1.5 99SY-A13e-S-1.5	Antimony Arsenic Barium Chromium Cobalt Copper Lead Mercury Vanadium Zinc Molybdenum	J J J J J J J J J J J	A	Field duplicates (RPD)
99-2302	99SY-US4c-W-10.2 99SY-US4k-W-10.2	Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Vanadium Zinc	J J J J J J J J J J J	A	Field duplicates (RPD)

SDG	Sample	Analyte	Flag	A or P	Reason
99-2302	99SY-US4c-S-9 99SY-US4k-S-9	Copper	J	A	Field duplicates (RPD)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2302

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2302	99SY-HI9b-S-1	Antimony Cadmium Mercury	0.58U mg/Kg 0.068U mg/Kg 0.063U mg/Kg	A
99-2302	99SY-US4c-S-9	Cadmium Mercury	0.11U mg/Kg 0.033U mg/Kg	A
99-2302	99SY-US4d-S-9**	Antimony Molybdenum	0.63U mg/Kg 0.049U mg/Kg	A
99-2302	99SY-US4e-S-9	Antimony Cadmium Mercury	0.55U mg/Kg 0.11U mg/Kg 0.038U mg/Kg	A
99-2302	99SY-US4k-S-9	Antimony Cadmium Mercury	0.36U mg/Kg 0.055U mg/Kg 0.024U mg/Kg	A
99-2302	99SY-HI9a-W-5	Beryllium Chromium Cobalt Copper Nickel Molybdenum	0.10U ug/L 0.77U ug/L 1.5U ug/L 0.90U ug/L 3.1U ug/L 3.0U ug/L	A
99-2302	99SY-HI9b-W-6.0	Beryllium Cobalt Copper Nickel Molybdenum	0.14U ug/L 1.4U ug/L 1.0U ug/L 4.3U ug/L 4.7U ug/L	A
99-2302	99SY-M1Dc-W-11	Chromium Cobalt Copper Nickel	5.3U ug/L 4.4U ug/L 8.8U ug/L 4.9U ug/L	A
99-2302	99SY-US4c-W-10.2	Cobalt Nickel Molybdenum	1.3U ug/L 2.9U ug/L 7.2U ug/L	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2302	99SY-US4d-W-8**	Arsenic Cobalt Copper Nickel Vanadium Zinc Molybdenum	4.9U ug/L 0.81U ug/L 1.6U ug/L 6.0U ug/L 1.5U ug/L 5.5U ug/L 6.6U ug/L	A
99-2302	99SY-US4e-W-12	Antimony Cobalt Nickel Vanadium Molybdenum	1.8U ug/L 3.8U ug/L 1.7U ug/L 1.9U ug/L 1.1U ug/L	A
99-2302	99SY-US4k-W-10.2	Cobalt Copper Nickel Molybdenum	1.1U ug/L 1.6U ug/L 2.6U ug/L 6.8U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs

Project No: 6210-014
Service ID: 992302
Lab Sample ID: 99-2302-1
Sample Matrix Soil

Collection Date: 03/05/1999
Collected by: DB/BB
Received Date: 03/05/1999
Moisture %: 2.9

Sample ID: **99SY-A13A-S-0**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.1	8.9	B	P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	29.7		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1	364		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	<0.0043	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	9.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.51	153		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.51	14.4		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.51	1720		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	573		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	210	27.0		CV		99M1432N	03/11/99	03/11/99	100	7470A
Molybdenum	7439-98-7	mg/kg	0.21	61.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	83.9		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.51	<0.1	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.51	<0.016	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.1	<0.072	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.51	21.5		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	5.1	8500		P		99M1428M	03/11/99	03/11/99	10	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

A41099

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-2	Received Date:	03/05/1999
Sample ID:	**99SY-A13B-S-1**	Sample Matrix	Soil	Moisture %:	52.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	11	12.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.64	17.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	2.1	961		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.42	<0.0089	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.42	17.7		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	1.1	199		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	1.1	19.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	1.1	2200		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.64	1040		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	42	181		CV		99M1432N	03/11/99	03/11/99	100	7470A
Molybdenum	7439-98-7	mg/kg	0.42	54.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.64	166		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	1.1	<0.21	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	1.1	1.3		P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	11	<0.15	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	1.1	52.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	1.1	3730		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

14059

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-3	Received Date:	03/05/1999
Sample ID:	**99SY-A13C-S-1.5**	Sample Matrix	Soil	Moisture %:	31.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	7.3	9.6		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.44	8.3		P		99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.5	412		P		99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.29	< 0.0061	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.29	3.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.73	299		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.73	14.5		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.73	1010		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.44	1090		P		99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.29	1.2		CV		99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.29	21.9		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.44	98.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.73	< 0.15	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.73	0.24	B	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	7.3	< 0.10	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.73	40.4		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.73	894		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-4	Received Date:	03/05/1999
Sample ID:	**99SY-A13E-S-1.5**	Sample Matrix	Soil	Moisture %:	0.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.0	5.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.30	5.2		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	180		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.20	<0.0042	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.20	2.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.50	140		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.50	7.7		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.50	635		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.30	465		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.20	0.69		CV		99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.20	14.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.30	84.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.50	<0.10	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.50	0.30	B	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.0	<0.070	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.50	22.9		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.50	606		P	J	99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-5	Received Date:	03/05/1999
Sample ID:	**99SY-A14A-S-0**	Sample Matrix	Soil	Moisture %:	4.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	0.53	10.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	13.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	0.11	629		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	<0.044	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	11.8		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.53	179		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.53	26.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.53	3670		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	746		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	210	293		CV		99M1432N	03/11/99	03/11/99	1000	7470A
Molybdenum	7439-98-7	mg/kg	0.21	55.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	293		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.53	<1.1	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.53	0.87		P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.3	<0.74	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.53	50.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	5.3	9500		P		99M1428M	03/11/99	03/11/99	10	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Sample ID:	99-2302-6	Received Date:	03/05/1999
Sample ID:	**99SY-A14B-S-1**	Sample Matrix	Soil	Moisture %:	45.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	9.2	13.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.55	23.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.8	1000		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.37	<0.0077	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.37	16.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.92	248		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.92	25.5		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.92	3360		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.55	1040		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	740	4370		CV		99M1432N	03/11/99	03/11/99	2000	7470A
Molybdenum	7439-98-7	mg/kg	0.37	84.2		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.55	240		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.92	<0.18	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.92	8.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	9.2	<0.13	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.92	80.4		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.92	5180		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-7	Received Date:	03/05/1999
Sample ID:	**99SY-A14C-S-3**	Sample Matrix	Soil	Moisture %:	3.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	6.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	20.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	343		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0044	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	2.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	86.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	15.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	3150		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	457		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	210	429		CV		99M1433N	03/11/99	03/12/99	1000	7470A
Molybdenum	7439-98-7	mg/kg	0.21	35.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	141		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	< 0.10	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	0.64		P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	< 0.073	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	26.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	1510		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-8	Received Date:	03/05/1999
Sample ID:	**99SY-A14D-S-0**	Sample Matrix	Soil	Moisture %:	46.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	9.4	165		P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.56	13.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.9	559		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.37	<0.0079	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.37	7.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.94	149		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.94	23.9		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.94	1480		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.56	1090		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	37	121		CV		99M1433N	03/11/99	03/12/99	100	7470A
Molybdenum	7439-98-7	mg/kg	0.37	36.4		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.56	210		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.94	<0.19	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.94	2.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	9.4	<0.13	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.94	72.3		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.94	4560		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-10	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-S-1**	Sample Matrix	Soil	Moisture %:	4.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.3	0.99	B	P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.32	0.91		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	617		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0044	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.17	B	P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.53	13.2		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.53	25.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.53	41.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.32	1.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	0.10	B	CV		99M1433N	03/11/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	< 0.025	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.32	59.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.53	< 0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.53	< 0.017	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.3	< 0.074	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.53	25.7		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.53	57.7		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

13951

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-01	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-230	Received Date:	03/05/1999
Sample ID:	**99SY-HI9B-S-1**	Sample Matrix	Soil	Moisture %:	10.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.58	~~B~~	P	U	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	3.7		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	80.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0047	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.068	~~B~~	P	UJ	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.56	22.6		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.56	9.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.56	12.6		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	3.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.063	~~B~~	CV	U	99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	< 0.027	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	14.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.56	< 0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.56	< 0.018	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.6	< 0.078	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.56	31.7		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.56	50.0		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-16	Received Date:	03/05/1999
Sample ID:	**99SY-SWBD-S-10**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.24	< 0.058	U	CV		99M1433N	03/11/99	03/12/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-17	Received Date:	03/05/1999
Sample ID:	**99SY-SWBD-S-6.5**	Sample Matrix	Soil	Moisture %:	9.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.22	<0.054	U	CV		99M1433N	03/11/99	03/12/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

14059

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-19	Received Date:	03/05/1999
Sample ID:	**99SY-SWBE-S-10**	Sample Matrix	Soil	Moisture %:	6.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.21	< 0.053	U	CV		99M1433N	03/11/99	03/12/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-20	Received Date:	03/05/1999
Sample ID:	**99SY-SWBE-S-6.5**	Sample Matrix	Soil	Moisture %:	9.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.22	< 0.054	U	CV		99M1433N	03/11/99	03/12/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-22	Received Date:	03/05/1999
Sample ID:	**99SY-SWBF-S-6.5**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	mg/kg	0.23	< 0.055	U	CV		99M1433N	03/11/99	03/12/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	BNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-24	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	0.70	B	P	J	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	6.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	123		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	<0.0048	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.11	B	P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.57	23.8		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.57	11.5		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.57	16.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	4.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.033	B	CV	J	99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	<0.027	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	17.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.57	<0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.57	<0.018	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.7	<0.080	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.57	39.7		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.57	56.5		P	J	99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-26	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-S-9**	Sample Matrix	Soil	Moisture %:	9.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	0.63	~~B~~	P	N	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	3.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	92.7		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0046	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.086	B	P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	17.5		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	9.5		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	20.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	7.0		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	< 0.054	U	CV		99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.049	~~B~~	P	N	99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	14.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	< 0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	< 0.018	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	< 0.077	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	32.1		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	46.7		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date: DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-28	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-S-9**	Sample Matrix	Soil	Moisture %:	12.3
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	0.55	B	P	U	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	3.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	92.5		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0048	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.11	B	P	UJ	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.57	21.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.57	11.2		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.57	22.6		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	7.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.038	B	CV	U	99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.027	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	20.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.57	< 0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.57	< 0.018	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.7	< 0.080	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.57	37.9		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.57	49.6		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

M11899

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Applied P & Ch Laboratory

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Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs

Project No: 6210-014
Service ID: 992302
Lab Sample ID: 99-2302-30
Sample Matrix Soil

Collection Date: 03/05/1999
Collected by: DB/BB
Received Date: 03/05/1999
Moisture %: 12.1

Sample ID: **99SY-US4G-S-1**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.7	2.0	B	P		99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.34	6.4		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	141		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0048	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.32		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.57	51.7		P		99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.57	14.9		P		99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.57	50.0		P		99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.34	12.8		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.12	B	CV		99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	0.75		P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.34	33.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.57	< 0.11	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.57	< 0.018	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.7	< 0.080	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.57	49.8		P		99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.57	146		P		99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-31	Received Date:	03/05/1999
Sample ID:	**99SY-US4H-S-3**	Sample Matrix	Soil	Moisture %:	0.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.0	7.5		P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.30	7.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	202		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.20	< 0.0042	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.20	7.8		P		99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.50	216		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.50	11.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.50	1780		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.30	253		P		99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.20	0.24		CV		99M1433N	03/11/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.20	36.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.30	259		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.50	0.88		P		99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.50	< 0.016	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.0	< 0.071	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.50	18.6		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.50	4640		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-32	Received Date:	03/05/1999
Sample ID:	**99SY-US4K-S-9**	Sample Matrix	Soil	Moisture %:	14.5
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.8	0.36	B	P	UJ	99M1428M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.35	2.8		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	68.9		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.23	< 0.0049	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.23	0.055	B	P	UJ	99M1428M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.58	13.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.58	7.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.58	9.2		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.35	2.6		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.23	0.024	B	CV	U	99M1432N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.23	< 0.028	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.35	10.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.58	< 0.12	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.58	< 0.019	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.8	< 0.082	U	P		99M1428M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.58	27.3		P	J	99M1428M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.58	33.1		P	J	99M1428M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-11	Received Date:	03/05/1999
Sample ID:	**99SY-HI9A-W-5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	54.3		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.10	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	0.77	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.5	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	0.90	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	3.0	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	3.1	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.5	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs
Project No: 6210-014
Service ID: 992302
Lab Sample ID: 99-2302-13
Collection Date: 03/05/1999
Collected by: DB/BB
Received Date: 03/05/1999
Sample ID: **99SY-HI9B-W-6.0**
Sample Matrix: Water
Moisture %: –
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	101		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	0.14	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.4	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	1.0	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	4.7	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.3	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.8	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-15	Received Date:	03/05/1999
Sample ID:	**99SY-M1DC-W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	191		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	5.3		P	U	99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	4.4	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	8.8	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	35.4		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.9	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	14.2		P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-18	Received Date:	03/05/1999
Sample ID:	**99SY-SWBD-W-15**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-21	Received Date:	03/05/1999
Sample ID:	**99SY-SWBE-W-14.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	< 0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-23	Received Date:	03/05/1999
Sample ID:	**99SY-SWBF-W-14.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-25	Received Date:	03/05/1999
Sample ID:	**99SY-US4C-W-10.2**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	113		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.3	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	7.2		P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.9	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.4	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-27	Received Date:	03/05/1999
Sample ID:	**99SY-US4D-W-8**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	4.9	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	269		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	0.81	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	1.6	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.6			UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	6.0			UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	<2.0	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.5	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	5.5		P	U	99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992302	Collected by:	DB/BB
		Lab Sample ID:	99-2302-29	Received Date:	03/05/1999
Sample ID:	**99SY-US4E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	1.8	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	136		~~P~~	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	3.8	~~B~~	~~P~~	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	1.1	~~B~~	~~P~~	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	1.7	~~B~~	~~P~~	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	8.7	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	1.9	~~B~~	P	U	99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs
Sample ID: **99SY-US4K-W-10.2**
Sample Type: Field Sample

Project No: 6210-014
Service ID: 992302
Lab Sample ID: 99-2302-33
Sample Matrix Water

Collection Date: 03/05/1999
Collected by: DB/BB
Received Date: 03/05/1999
Moisture %: -

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	107		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.1	B	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	1.6	B	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	6.8		P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.6	B	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.5	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	<0.83	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/6/99

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 9, 1999

Matrix: Soil

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2302

Sample Identification

99SY-HI9a-S-1
99SY-HI9b-S-1
99SY-M1Dc-S-2
99SY-US4c-S-9
99SY-US4d-S-9
99SY-US4e-S-9
99SY-US4g-S-1
99SY-US4k-S-9
99SY-US4k-S-9DUP

Introduction

This data review covers 9 soil samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9045 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 99SY-US4c-S-9 and 99SY-US4k-S-9 were identified as field duplicates. The results are listed as follows:

Analyte	Concentration (units)		RPD (Limits)	Flag	A or P
	99SY-US4c-S-9	99SY-US4k-S-9			
pH	7.14	6.98	2 (≤35)	-	-

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2302

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992302 Collected by: DB/BB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2302-10	99SY-HI9A-S-1	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.38	
99-2302-12	99SY-HI9B-S-1	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.84	
99-2302-14	99SY-M1DC-S-2	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.64	
99-2302-24	99SY-US4C-S-9	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.14	
99-2302-26	99SY-US4D-S-9	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.02	
99-2302-28	99SY-US4E-S-9	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	7.06	
99-2302-30	99SY-US4G-S-1	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	8.03	
99-2302-32	99SY-US4K-S-9	Soil	03/05/99	03/05/99	03/08/99	99W2351	pH unit	0.01	6.98	
99W2351-MB-01		Soil	03/08/99	03/08/99	03/08/99	99W2351	pH unit	0.01	6.10	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/1/99

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 22, 1999

Matrix: Sediment

Parameters: Volatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2692

Sample Identification

99SY-A13b-S-1
99SY-A13e-S-1.5
99SY-A13b-S-1MS
99SY-A13b-S-1MSD

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
99SY-A13b-S-1 99SY-A13e-S-1.5 99SY-A13b-S-1MS 99SY-A13b-S-1MSD	21	14	J	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/26/99	1,2-Dibromo-3-chloropropane	26.6	All samples in SDG 99-2692	J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-A13b-S-1MS/MSD (All samples in SDG 99-2692)	Trichloroethene	-	-	38 (≤29)	J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2692

SDG	Sample	Compound	Flag	A or P	Reason
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	All TCL compounds	J	P	Technical holding times
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	1,2-Dibromo-3-chloropropane	J	A	Continuing calibration (%D)
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	Trichloroethene	J	A	Matrix spike/Matrix spike duplicates (RPD)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-1	Received Date:	03/05/1999
Sample ID:	**99SY-A13B-S-1**	Sample Matrix	Soil	Moisture %:	47.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/26/99	Anal. Date:	03/26/99
Batch No:	99G2076	Prep. No:	-	Anal. Time:	08:11
Data File Name:	2692-01	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	9.6	<9.6	U
2	Bromobenzene	108-86-1	µg/kg	9.6	<9.6	U
3	Bromochloromethane	74-97-5	µg/kg	9.6	<9.6	U
4	Bromodichloromethane	75-27-4	µg/kg	9.6	<9.6	U
5	Bromoform	75-25-2	µg/kg	9.6	<9.6	U
6	Bromomethane	74-83-9	µg/kg	9.6	<9.6	U
7	n-Butylbenzene	104-51-8	µg/kg	9.6	<9.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	9.6	<9.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	9.6	<9.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	9.6	<9.6	U
11	Chlorobenzene	108-90-7	µg/kg	9.6	<9.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	9.6	<9.6	U
13	Chloroethane	75-00-3	µg/kg	9.6	<9.6	U
14	Chloroform	67-66-3	µg/kg	9.6	<9.6	U
15	Chloromethane	74-87-3	µg/kg	9.6	<9.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	9.6	<9.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	9.6	<9.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	9.6	<9.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	9.6	<9.6	U
20	Dibromomethane	74-95-3	µg/kg	9.6	<9.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	9.6	<9.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	9.6	<9.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	9.6	<9.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	9.6	<9.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	9.6	<9.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	9.6	<9.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	9.6	<9.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	9.6	<9.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	9.6	<9.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	9.6	<9.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	9.6	<9.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	9.6	<9.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	9.6	<9.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	9.6	<9.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	9.6	<9.6	U
36	Ethylbenzene	100-41-4	µg/kg	9.6	<9.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	9.6	<9.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	9.6	<9.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	9.6	<9.6	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	9.6	<9.6	U
41	Naphthalene	91-20-3	µg/kg	9.6	10	
42	n-Propylbenzene	103-65-1	µg/kg	9.6	<9.6	U
43	Styrene	100-42-5	µg/kg	9.6	<9.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	9.6	<9.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	9.6	<9.6	U
46	Tetrachloroethene	127-18-4	µg/kg	9.6	<9.6	U
47	Toluene	108-88-3	µg/kg	9.6	<9.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	9.6	<9.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	9.6	<9.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	9.6	<9.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	9.6	<9.6	U
52	Trichloroethene	79-01-6	µg/kg	9.6	<9.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	9.6	<9.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	9.6	<9.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	9.6	<9.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	9.6	<9.6	U
57	Vinyl chloride	75-01-4	µg/kg	9.6	<9.6	U
58	o-Xylene	95-47-6	µg/kg	9.6	<9.6	U
59	m/p-Xylene	108-38-3	µg/kg	9.6	<9.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	97
2	Dibromofluoromethane	1868-53-7	75-124	93
3	1,2-Dichloroethane-d4	17060-07-0	75-129	85
4	Toluene-d8	2037-26-5	80-119	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	139
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	155
3	Fluorobenzene	462-06-6	50-200	130
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-2	Received Date:	03/05/1999
Sample ID:	**99SY-A13E-S-1.5**	Sample Matrix	Soil	Moisture %:	19.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/26/99	Anal. Date:	03/26/99
Batch No:	99G2076	Prep. No:	–	Anal. Time:	09:13
Data File Name:	2692-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.2	<6.2	U UJ
2	Bromobenzene	108-86-1	µg/kg	6.2	<6.2	U
3	Bromochloromethane	74-97-5	µg/kg	6.2	<6.2	U
4	Bromodichloromethane	75-27-4	µg/kg	6.2	<6.2	U
5	Bromoform	75-25-2	µg/kg	6.2	<6.2	U
6	Bromomethane	74-83-9	µg/kg	6.2	<6.2	U
7	n-Butylbenzene	104-51-8	µg/kg	6.2	<6.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.2	<6.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.2	<6.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.2	<6.2	U
11	Chlorobenzene	108-90-7	µg/kg	6.2	<6.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.2	<6.2	U
13	Chloroethane	75-00-3	µg/kg	6.2	<6.2	U
14	Chloroform	67-66-3	µg/kg	6.2	<6.2	U
15	Chloromethane	74-87-3	µg/kg	6.2	<6.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.2	<6.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.2	<6.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.2	<6.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.2	<6.2	U
20	Dibromomethane	74-95-3	µg/kg	6.2	<6.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.2	<6.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.2	<6.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.2	<6.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.2	<6.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.2	<6.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.2	<6.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.2	<6.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.2	<6.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.2	<6.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.2	<6.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.2	<6.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.2	<6.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.2	<6.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.2	<6.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.2	<6.2	U
36	Ethylbenzene	100-41-4	µg/kg	6.2	<6.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.2	<6.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.2	<6.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.2	<6.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.2	<6.2	U
41	Naphthalene	91-20-3	µg/kg	6.2	<6.2	U
42	n-Propylbenzene	103-65-1	µg/kg	6.2	<6.2	U
43	Styrene	100-42-5	µg/kg	6.2	<6.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.2	<6.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.2	<6.2	U
46	Tetrachloroethene	127-18-4	µg/kg	6.2	<6.2	U
47	Toluene	108-88-3	µg/kg	6.2	<6.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.2	<6.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.2	<6.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.2	<6.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.2	<6.2	U
52	Trichloroethene	79-01-6	µg/kg	6.2	<6.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.2	<6.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.2	<6.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.2	2	J
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.2	<6.2	U
57	Vinyl chloride	75-01-4	µg/kg	6.2	<6.2	U
58	o-Xylene	95-47-6	µg/kg	6.2	<6.2	U
59	m/p-Xylene	108-38-3	µg/kg	6.2	<6.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	100
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	89
4	Toluene-d8	2037-26-5	80-119	92
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	163
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	173
3	Fluorobenzene	462-06-6	50-200	144
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 22, 1999

Matrix: Sediment

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2692

Sample Identification

99SY-A13b-S-1
99SY-A13e-S-1.5
99SY-A13b-S-1MS
99SY-A13b-S-1MSD

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collection Until Extraction	Required Holding Time (In Days) From Sample Collection Until Extraction	Flag	A or P
99SY-A13b-S-1 99SY-A13e-S-1.5 99SY-A13b-S-1MS 99SY-A13b-S-1MSD	21	14	J	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2692

SDG	Sample	Compound	Flag	A or P	Reason
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	All TCL compounds	J	P	Technical holding times

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-1	Received Date:	03/05/1999
Sample ID:	**99SY-A13B-S-1**	Sample Matrix	Soil	Moisture %:	47.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270	Prep. Date:	03/26/99	Anal. Date:	03/30/99
Batch No:	99G2096	Prep. No:	1 of 1	Anal. Time:	15:30
Data File Name:	2692-01	Sample Amount:	2.00 g	Dilution Factor:	150
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	140000	<140000	U
2	Acenaphthylene	208-96-8	µg/kg	140000	<140000	U
3	Anthracene	120-12-7	µg/kg	140000	<140000	U
4	Benz(a)anthracene	56-55-3	µg/kg	140000	<140000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	140000	<140000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	140000	<140000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	140000	<140000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	140000	<140000	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	140000	<140000	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	140000	<140000	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	140000	<140000	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	140000	41000	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	140000	<140000	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	140000	<140000	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	290000	<290000	U
16	4-Chloroaniline	106-47-8	µg/kg	290000	<290000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	140000	<140000	U
18	2-Chlorophenol	95-57-8	µg/kg	140000	<140000	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	140000	<140000	U
20	Chrysene	218-01-9	µg/kg	140000	<140000	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	140000	<140000	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	140000	<140000	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	140000	<140000	U
24	Dibenzofuran	132-64-9	µg/kg	140000	<140000	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	140000	<140000	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	140000	<140000	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	140000	<140000	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	290000	<290000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	140000	<140000	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	140000	<140000	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	140000	<140000	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	140000	<140000	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	720000	<720000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	720000	<720000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	140000	<140000	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	140000	<140000	U
37	Fluoranthene	206-44-0	µg/kg	140000	<140000	U
38	Fluorene	86-73-7	µg/kg	140000	<140000	U
39	Hexachlorobenzene	118-74-1	µg/kg	140000	<140000	U
40	Hexachlorobutadiene	87-68-3	µg/kg	140000	<140000	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	140000	< 140000	U
42	Hexachloroethane	67-72-1	µg/kg	140000	< 140000	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	140000	< 140000	U
44	Isophorone	78-59-1	µg/kg	140000	< 140000	U
45	2-Methylnaphthalene	91-57-6	µg/kg	140000	< 140000	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	140000	< 140000	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	140000	< 140000	U
48	Naphthalene	91-20-3	µg/kg	140000	< 140000	U
49	2-Nitroaniline	88-74-4	µg/kg	720000	< 720000	U
50	3-Nitroaniline	99-09-2	µg/kg	720000	< 720000	U
51	4-Nitroaniline	100-01-6	µg/kg	720000	< 720000	U
52	Nitrobenzene	98-95-3	µg/kg	140000	< 140000	U
53	2-Nitrophenol	88-75-5	µg/kg	140000	< 140000	U
54	4-Nitrophenol	100-02-7	µg/kg	720000	< 720000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	140000	< 140000	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	140000	< 140000	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	720000	< 720000	U
58	Phenanthrene	85-01-8	µg/kg	140000	< 140000	U
59	Phenol	108-95-2	µg/kg	140000	< 140000	U
60	Pyrene	129-00-0	µg/kg	140000	< 140000	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	140000	< 140000	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	140000	< 140000	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	140000	< 140000	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	67
2	2-Fluorophenol	367-12-4	25-103	31
3	Nitrobenzene-d5	4165-60-0	23-119	50
4	Phenol-d5	4165-62-2	24-112	29
5	Terphenyl-d14	1718-51-0	18-136	64
6	2,4,6-Tribromophenol	118-79-6	20-119	55
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	103
2	Chrysene-d12	1719-03-5	50-200	122
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	94
6	Phenanthrene-d10	1517-22-2	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

MW299

19648

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-2	Received Date:	03/05/1999
Sample ID:	**99SY-A13E-S-1.5**	Sample Matrix	Soil	Moisture %:	19.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270	Prep. Date:	03/26/99	Anal. Date:	03/30/99
Batch No:	99G2096	Prep. No:	1 of 1	Anal. Time:	17:26
Data File Name:	2692-02A	Sample Amount:	2.00 g	Dilution Factor:	15
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	9300	< 9300	U
2	Acenaphthylene	208-96-8	µg/kg	9300	< 9300	U
3	Anthracene	120-12-7	µg/kg	9300	< 9300	U
4	Benz(a)anthracene	56-55-3	µg/kg	9300	< 9300	U
5	Benzo(a)pyrene	50-32-8	µg/kg	9300	< 9300	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	9300	< 9300	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	9300	< 9300	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	9300	< 9300	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	9300	< 9300	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	9300	< 9300	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	9300	< 9300	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	9300	4700	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	9300	< 9300	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	9300	< 9300	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	19000	< 19000	U
16	4-Chloroaniline	106-47-8	µg/kg	19000	< 19000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	9300	< 9300	U
18	2-Chlorophenol	95-57-8	µg/kg	9300	< 9300	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	9300	< 9300	U
20	Chrysene	218-01-9	µg/kg	9300	< 9300	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	9300	< 9300	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	9300	< 9300	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	9300	< 9300	U
24	Dibenzofuran	132-64-9	µg/kg	9300	< 9300	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	9300	< 9300	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	9300	< 9300	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	9300	< 9300	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	19000	< 19000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	9300	< 9300	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	9300	< 9300	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	9300	< 9300	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	9300	< 9300	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	47000	< 47000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	47000	< 47000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	9300	< 9300	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	9300	< 9300	U
37	Fluoranthene	206-44-0	µg/kg	9300	< 9300	U
38	Fluorene	86-73-7	µg/kg	9300	< 9300	U
39	Hexachlorobenzene	118-74-1	µg/kg	9300	< 9300	U
40	Hexachlorobutadiene	87-68-3	µg/kg	9300	< 9300	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	9300	<9300	U
42	Hexachloroethane	67-72-1	µg/kg	9300	<9300	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	9300	<9300	U
44	Isophorone	78-59-1	µg/kg	9300	<9300	U
45	2-Methylnaphthalene	91-57-6	µg/kg	9300	<9300	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	9300	<9300	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	9300	<9300	U
48	Naphthalene	91-20-3	µg/kg	9300	<9300	U
49	2-Nitroaniline	88-74-4	µg/kg	47000	<47000	U
50	3-Nitroaniline	99-09-2	µg/kg	47000	<47000	U
51	4-Nitroaniline	100-01-6	µg/kg	47000	<47000	U
52	Nitrobenzene	98-95-3	µg/kg	9300	<9300	U
53	2-Nitrophenol	88-75-5	µg/kg	9300	<9300	U
54	4-Nitrophenol	100-02-7	µg/kg	47000	<47000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	9300	<9300	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	9300	<9300	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	47000	<47000	U
58	Phenanthrene	85-01-8	µg/kg	9300	<9300	U
59	Phenol	108-95-2	µg/kg	9300	<9300	U
60	Pyrene	129-00-0	µg/kg	9300	<9300	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	9300	<9300	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	9300	<9300	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	9300	<9300	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	55
2	2-Fluorophenol	367-12-4	25-103	39
3	Nitrobenzene-d5	4165-60-0	23-119	53
4	Phenol-d5	4165-62-2	24-112	47
5	Terphenyl-d14	1718-51-0	18-136	92
6	2,4,6-Tribromophenol	118-79-6	20-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	101
2	Chrysene-d12	1719-03-5	50-200	108
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	93
4	Naphthalene-d8	1146-65-2	50-200	97
5	Perylene-d12	1520-96-3	50-200	58
6	Phenanthrene-d10	1517-22-2	50-200	107
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/27/99

19657

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 22, 1999

Matrix: Sediment

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2692

Sample Identification

99SY-A13b-S-1
99SY-A13e-S-1.5
99SY-A13b-S-1MS
99SY-A13b-S-1MSD

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
99SY-A13b-S-1 99SY-A13e-S-1.5 99SY-A13b-S-1MS 99SY-A13b-S-1MSD	21	14	J	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2692

SDG	Sample	Compound	Flag	A or P	Reason
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	All TCL compounds	J	P	Technical holding times

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-2	Received Date:	03/05/1999
Sample ID:	**99SY-A13E-S-1.5**	Sample Matrix	Soil	Moisture %:	19.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/26/99	Anal. Date:	03/27/99
Batch No:	99G2097	Prep. No:	1 of 1	Anal. Time:	02:59
Data File Name:	2692.002	Sample Amount:	2.00 g	Dilution Factor:	15
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	930	< 930	U UJ
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	1900	< 1900	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	930	< 930	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	930	< 930	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	930	< 930	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	470	< 470	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	470	280	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	77
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	71
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/12/99

19772

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-1	Received Date:	03/05/1999
Sample ID:	**99SY-A13B-S-1**	Sample Matrix	Soil	Moisture %:	47.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/26/99	Anal. Date:	03/27/99
Batch No:	99G2097	Prep. No:	1 of 1	Anal. Time:	02:34
Data File Name:	2692.001	Sample Amount:	2.00 g	Dilution Factor:	15
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	1400	< 1400	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	2900	< 2900	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	1400	< 1400	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	1400	< 1400	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	1400	970	J
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	720	< 720	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	720	990	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	56
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/2/99

19767

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 22, 1999

Matrix: Sediment

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2692

Sample Identification

99SY-A13b-S-1
99SY-A13e-S-1.5
99SY-A13b-S-1MS
99SY-A13b-S-1MSD

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collect on Unt l Extract on	Requ red Hold ng T me (n Days) From Sample Collect on Unt l Extract on	Flag	A or P
99SY-A13b-S-1 99SY-A13e-S-1.5 99SY-A13b-S-1MS 99SY-A13b-S-1MSD	21	14	J	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-A13b-S-1MS/MSD (All samples in SDG 99-2692)	TPH as extractables	-	-	195 (≤50)	J	A

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2692

SDG	Sample	Compound	Flag	A or P	Reason
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	TPH as extractables	J	P	Technical holding times
99-2692	99SY-A13b-S-1 99SY-A13e-S-1.5	TPH as extractables	J	A	Matrix spike/Matrix spike duplicates (RPD)

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-1	Received Date:	03/05/1999
Sample ID:	**99SY-A13B-S-1**	Sample Matrix	Soil	Moisture %:	47.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/26/99	Anal. Date:	03/29/99
Batch No:	99G2095	Prep. No:	1 of 1	Anal. Time:	19:10
Data File Name:	2692.101	Sample Amount:	2.00 g	Dilution Factor:	500
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	9600	26000	J
2	Motor oil		mg/kg	9600	53000	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	37700
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

apr2199

19936

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/05/1999
Project ID:	LBNSY AOCs	Service ID:	992692	Collected by:	
		Lab Sample ID:	99-2692-2	Received Date:	03/05/1999
Sample ID:	**99SY-A13E-S-1.5**	Sample Matrix	Soil	Moisture %:	19.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/26/99	Anal. Date:	03/27/99
Batch No:	99G2095	Prep. No:	1 of 1	Anal. Time:	06:21
Data File Name:	2692.002	Sample Amount:	2.00 g	Dilution Factor:	50
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	620	490	X J
2	Motor oil		mg/kg	620	5200	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	5320
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/21/99

19938

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 5, 1999

LDC Report Date: April 22, 1999

Matrix: Sediment

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2692

Sample Identification

99SY-A13b-S-1
99SY-A13e-S-1.5
99SY-A13e-S-1.5DUP

Introduction

This data review covers 3 sediment samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9040 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2692

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992692 Collected by:

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2692-1	99SY-A13B-S-1	Soil	03/05/99	03/05/99	03/26/99	99W2776	pH unit	0.01	7.55	
99-2692-2	99SY-A13E-S-1.5	Soil	03/05/99	03/05/99	03/26/99	99W2776	pH unit	0.01	7.85	
99W2776-MB-01		Soil	03/26/99	03/26/99	03/26/99	99W2776	pH unit	0.01	6.15	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/2/99

20345

Applied P & Ch Laboratory

APCL

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Chain of Custody

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Client: COM FEDERAL PROGRAMS Contact: DAVE BJOSTAD Tel #: 619 268 3383 Fax #: 619 268 9677

Address: 3760 Convoy St Ste 210 City: SAN DIEGO State: CA Zip code: 92111

Bill to: COM - Denver, CO

Project Name/Code: BNSY Group B AOCs Job #6210-014 P.O. #

Project Address: Long Beach Naval Shipyard, CA APCL Quotation #

Due Date: ☒ regular ☐ rush: ___ days ___ hours Sampled by: DBond, DBjostad

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	Metals 6010C	PCBs 8082	TPH-ext 8015m	pH 9045D	pH 9040	Mercury 7470/7471A				Remarks
	99SY-BT21-W-10	3/5/99	0715	Water	HCl	2	X											
	99SY-SWbd-S-6.5		0730	Soil	4°C	1								X				
	99SY-SWbd-S-10		0745	Soil	4°C	1								X				
	99SY-SWbd-W-15		0750	Water	HNO_3	1								X				
	99SY-SWbe-S-6.5		0800	Soil	4°C	1								X				
	99SY-SWbe-S-10		0810	Soil	4°C	1								X				
	99SY-SWbe-W-14.6		0815	Water	HNO_3	1								X				
	99SY-SWbf-S-6.5		0805	Soil	4°C	1								X				
	99SY-SWbf-W-14.6		0820	Water	HNO_3	1								X				
	99SY-HI96-S-1		0830	Soil	4°C	2	X	X	X	X	X							
	99SY-HI96-W-6.0		0845	Water	YES	6	X	X	X	X	X							
	99SY-HI9a-S-1		0900	Soil	4°C	2	X	X	X	X	X							
	99SY-~~HI9a~~-W-5		0910	Water	YES	6	X	X	X	X	X							
ISB	HI9a-																	

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QC Requirement: ☐ Regular; ☐ QA/QC Report; ☐ WIP; ☒ Raw Data; ☐ Extended Raw Data ☐ CLP; ☐ ACE ☐ APCEE ☒ NEESA ___ (E, C or D); ☐ Other _____ (Please specify)

Sample Disposal: ☐ Return ☒ Disposal by APCL ☐ Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐ Intact; ☐ Broken. Cooler Seal: ☐ Intact; ☐ Broken; ☐ None. Tag # _____ Temperature: ☐ Room ☐ Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/5/99 / 1540 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

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Applied P & Ch Laboratory

APCL

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Cooler 1 - 03-05-99

Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM-Denver, CO

Project Name/Code LBNSY AOCs Job # 6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by:

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Metals 6010C	SVOCs 8270C	TPH-extr. 8015m	PCBs 8082	VOCs 8260B	SVOCs 8270C	TPH-extr. 8015m	PCBs 8082	VOCs 8260B	Remarks
	99SY-A13a-S-0	3/5/99	0730	sediment	4°C	1	X									
	99SY-A13c-S-1.5	3/5/99	0740	sediment	4°C	1	X	[			]					May request these analyses on 3/8/99 or 3/9/99 - will call and send fax if so. Very oily samples.
	99SY-A13e-S-1.5	↓	0740	sediment	4°C	1	X		HOLD			X	X	X	X	
	99SY-A13b-S-1	↓	0755	sediment	4°C	1	X	L			]	X	X	X	X	
												Added 3/11/99 Dave Bjostad				
	99SY-U54d-S-9	3/5/99	1010	soil	4°C	2	X	X			X					
	99SY-U54d-W-8	↓	1015	water	HCl	2					X					
	99SY-U54c-S-9		1130	soil	4°C	2	X	X			X					
	99SY-U54c-W-10.2		1155	water	HCl	2					X					
	99SY-U54k-S-9		1140	soil	4°C	2	X	X			X					
	99SY-U54k-W-10.2		1200	water	HCl	2					X					
	99SY-U54e-S-9		1240	soil	4°C	2	X	X			X					
	99SY-U54e-W-12	↓	1300 1316	water	HCl	2					X					

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QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. If not specified, samples will be discarded 45 days after samples are received.

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [X] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

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Applied P & Ch Laboratory

APCL

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Chain of Custody

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Client: CDM Federal Contact: Dave Bjostad Tel #: 619-268-3383 Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 City: San Diego State: CA Zip code: 92111

Bill to: CDM - Denver CO

Project Name/Code LBNSY AOCs Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours Sampled by:

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	Metals 6010C	SVOCs 8270C										Remarks
	995Y-M1Dc-S-2	3/5/99	1400	soil	4°C	2	X	X											
	995Y-US4g-S-1	↓	1345	soil	4°C	2	X	X	X										
	995Y-M1Dc-W-11	↓	1405	water	HCl	2	X												
	995Y-US4h-S-3	↓	1205	sediment	4°C	1	X												

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QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

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Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

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Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St, Ste. 310 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code: LBNSY AOCs | Job #: 6210-014 | P.O. #

Project Address: Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by:

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Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	Metals 6010C	Remarks
DB	~~995Y-US4d-S-9~~	3/5/99	1010	Soil	4°C	2				
	~~995Y-US4d-W-8~~		1015	water	HCl	2	X	X	X	MS/MSD
DB	~~995Y-US4f-S-~~			Soil	4°C					
	995Y-US4c-W-10.2		1155	Water	HCl	2	X	X	X	
DB	~~995Y-US4k-S-~~			Soil	4°C					
	995Y-US4k-W-10.2		1200	Water	HCl	2	X	X	X	
	995Y-US4k-S-3		1205	sediment	4°C	2	X	X	X	MS/MSD if needed
DB	~~995Y-US4-S-1~~			Soil						
	995Y-A14a-S-0		1310	sediment	4°C	1			X	
	995Y-A14d-S-0		1315	sediment	4°C	1			X	
	995Y-A14b-S-1		1325	sediment	4°C	2			X	Primary MS/MSD for sediment.
	995Y-A14c-S-3		1335	sediment	4°C	1			X	
DB	~~995Y-US4e-S-~~									
	995Y-US4e-W-12		1310	water	metals-HNO3	2		X	X	
	995Y-M1Dc-W-11		1405	water	HNO3	1			X	

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/5/99 /1540 Received by Date/Time /

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APCL USE ONLY Service # Note:

Clients und[illegible]d that all terms described in the proposals, quotations for this project, and/or t[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]es the right to terminat[illegible]ervice or withhold delivery of any reports, if in APCL's sole discretion the terms [illegible] project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-BT1u-W-10
99SY-M1Db-S-2
99SY-M1Db-W-10.8
99SY-Ml6c-S-5**
99SY-Ml6c-W-10**
99SY-S1nf-S-5
99SY-S1nf-S-10**
99SY-S1nf-W-9
99SY-S1ng-S-5
99SY-S1ng-S-10
99SY-S1ng-W-8.5
99SY-S1nh-S-5
99SY-S1nh-S-10
99SY-S1nh-W-9
99SY-M1Db-S-2MS
99SY-M1Db-S-2MSD
99SY-S1nh-W-9MS
99SY-S1nh-W-9MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 10 soil samples and 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/13/99	Dichlorodifluoromethane	31.3	99SY-M1Db-S-2MS 99SY-M1Db-S-2MSD 99G1912-MB-01	J	A
3/15/99	1,1,2,2-Tetrachloroethane	27.4	99SY-M1Db-S-2 99SY-S1nf-S-5 99SY-S1nf-S-10** 99SY-MI6c-S-5** 99SY-S1ng-S-5 99SY-S1ng-S-10 99SY-S1nh-S-5 99SY-S1nh-S-10 99G1912-MB-02	J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1u-W-10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
99SY-BT1u-W-10	3/8/99	Chloroform	11 ug/L	99SY-M1Db-S-2 99SY-M1Db-W-10.8 99SY-MI6c-S-5** 99SY-MI6c-W-10** 99SY-S1nf-S-5 99SY-S1nf-S-10** 99SY-S1nf-W-9 99SY-S1ng-S-5 99SY-S1ng-S-10 99SY-S1ng-W-8.5 99SY-S1nh-S-5 99SY-S1nh-S-10 99SY-S1nh-W-9

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-M1Db-W-10.8	Chloroform	1 ug/L	5U ug/L
99SY-MI6c-W-10**	Chloroform	2 ug/L	5U ug/L
99SY-S1nf-W-9	Chloroform	1 ug/L	5U ug/L
99SY-S1nh-W-9	Chloroform	2 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99G1912-MB-01	Toluene-d8	77 (80-119)	All TCL compounds	J	P
99SY-S1nf-S-10**	Toluene-d8	75 (80-119)	All TCL compounds	J	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2329

SDG	Sample	Compound	Flag	A or P	Reason
99-2329	99SY-M1Db-S-2 99SY-S1nf-S-5 99SY-S1nf-S-10** 99SY-MI6c-S-5** 99SY-S1ng-S-5 99SY-S1ng-S-10 99SY-S1nh-S-5 99SY-S1nh-S-10	1,1,2,2-Tetrachloroethane	J	A	Continuing calibration (%D)
99-2329	99SY-S1nf-S-10**	All TCL compounds	J	P	Surrogate spikes (%R)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2329

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2329	99SY-M1Db-W-10.8	Chloroform	5U ug/L	A
99-2329	99SY-MI6c-W-10**	Chloroform	5U ug/L	A
99-2329	99SY-S1nf-W-9	Chloroform	5U ug/L	A
99-2329	99SY-S1nh-W-9	Chloroform	5U ug/L	A

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-1	Received Date:	03/08/1999
Sample ID:	**99SY-BT1U-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	18:09
Data File Name:	2329-01	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	11	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	98
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	93
4	Toluene-d8	2037-26-5	81-118	99
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	95
3	Fluorobenzene	462-06-6	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-2	Received Date:	03/08/1999
Sample ID:	**99SY-M1DB-S-2**	Sample Matrix	Soil	Moisture %:	2.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	12:47
Data File Name:	2329-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.1	< 5.1	U
2	Bromobenzene	108-86-1	µg/kg	5.1	< 5.1	U
3	Bromochloromethane	74-97-5	µg/kg	5.1	< 5.1	U
4	Bromodichloromethane	75-27-4	µg/kg	5.1	< 5.1	U
5	Bromoform	75-25-2	µg/kg	5.1	< 5.1	U
6	Bromomethane	74-83-9	µg/kg	5.1	< 5.1	U
7	n-Butylbenzene	104-51-8	µg/kg	5.1	< 5.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.1	< 5.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.1	< 5.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.1	< 5.1	U
11	Chlorobenzene	108-90-7	µg/kg	5.1	< 5.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.1	< 5.1	U
13	Chloroethane	75-00-3	µg/kg	5.1	< 5.1	U
14	Chloroform	67-66-3	µg/kg	5.1	< 5.1	U
15	Chloromethane	74-87-3	µg/kg	5.1	< 5.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.1	< 5.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.1	< 5.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.1	< 5.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.1	< 5.1	U
20	Dibromomethane	74-95-3	µg/kg	5.1	< 5.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.1	< 5.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.1	< 5.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.1	< 5.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.1	< 5.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.1	< 5.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.1	< 5.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.1	< 5.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.1	< 5.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.1	< 5.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.1	< 5.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.1	< 5.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.1	< 5.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.1	< 5.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.1	< 5.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.1	< 5.1	U
36	Ethylbenzene	100-41-4	µg/kg	5.1	< 5.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.1	< 5.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.1	< 5.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.1	< 5.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.1	< 5.1	U
41	Naphthalene	91-20-3	µg/kg	5.1	< 5.1	U
42	n-Propylbenzene	103-65-1	µg/kg	5.1	< 5.1	U
43	Styrene	100-42-5	µg/kg	5.1	< 5.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.1	< 5.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.1	< 5.1	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.1	< 5.1	U
47	Toluene	108-88-3	µg/kg	5.1	< 5.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.1	< 5.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.1	< 5.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.1	< 5.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.1	< 5.1	U
52	Trichloroethene	79-01-6	µg/kg	5.1	< 5.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.1	< 5.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.1	< 5.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.1	< 5.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.1	< 5.1	U
57	Vinyl chloride	75-01-4	µg/kg	5.1	< 5.1	U
58	o-Xylene	95-47-6	µg/kg	5.1	< 5.1	U
59	m/p-Xylene	108-38-3	µg/kg	5.1	< 5.1	U
60	Xylenes (total)	1330-20-7	µg/kg	5.1	< 5.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	94
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	87
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	92
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	97
3	Fluorobenzene	462-06-6	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-3	Received Date:	03/08/1999
Sample ID:	**99SY-M1DB-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	18:42
Data File Name:	2329-03	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	1	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	99
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	102
4	Toluene-d8	2037-26-5	81-118	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	91
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-4	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-S-5**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	14:19
Data File Name:	2329-04	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.9	< 5.9	U
2	Bromobenzene	108-86-1	µg/kg	5.9	< 5.9	U
3	Bromochloromethane	74-97-5	µg/kg	5.9	< 5.9	U
4	Bromodichloromethane	75-27-4	µg/kg	5.9	< 5.9	U
5	Bromoform	75-25-2	µg/kg	5.9	< 5.9	U
6	Bromomethane	74-83-9	µg/kg	5.9	< 5.9	U
7	n-Butylbenzene	104-51-8	µg/kg	5.9	< 5.9	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.9	< 5.9	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.9	< 5.9	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.9	< 5.9	U
11	Chlorobenzene	108-90-7	µg/kg	5.9	< 5.9	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.9	< 5.9	U
13	Chloroethane	75-00-3	µg/kg	5.9	< 5.9	U
14	Chloroform	67-66-3	µg/kg	5.9	< 5.9	U
15	Chloromethane	74-87-3	µg/kg	5.9	< 5.9	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.9	< 5.9	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.9	< 5.9	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.9	< 5.9	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.9	< 5.9	U
20	Dibromomethane	74-95-3	µg/kg	5.9	< 5.9	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.9	< 5.9	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.9	< 5.9	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.9	< 5.9	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.9	< 5.9	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.9	< 5.9	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.9	< 5.9	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.9	< 5.9	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.9	< 5.9	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.9	< 5.9	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.9	< 5.9	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.9	< 5.9	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.9	< 5.9	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.9	< 5.9	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.9	< 5.9	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.9	< 5.9	U
36	Ethylbenzene	100-41-4	µg/kg	5.9	< 5.9	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.9	< 5.9	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.9	< 5.9	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.9	< 5.9	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.9	< 5.9	U
41	Naphthalene	91-20-3	µg/kg	5.9	< 5.9	U
42	n-Propylbenzene	103-65-1	µg/kg	5.9	< 5.9	U
43	Styrene	100-42-5	µg/kg	5.9	< 5.9	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.9	< 5.9	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.9	< 5.9	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.9	1	J
47	Toluene	108-88-3	µg/kg	5.9	< 5.9	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.9	< 5.9	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.9	< 5.9	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.9	< 5.9	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.9	< 5.9	U
52	Trichloroethene	79-01-6	µg/kg	5.9	1	J
53	Trichlorofluoromethane	75-69-4	µg/kg	5.9	< 5.9	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.9	< 5.9	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.9	< 5.9	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.9	< 5.9	U
57	Vinyl chloride	75-01-4	µg/kg	5.9	< 5.9	U
58	o-Xylene	95-47-6	µg/kg	5.9	< 5.9	U
59	m/p-Xylene	108-38-3	µg/kg	5.9	< 5.9	U
60	Xylenes (total)	1330-20-7	µg/kg	5.9	< 5.9	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	80
4	Toluene-d8	2037-26-5	80-119	91
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	115
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	137
3	Fluorobenzene	462-06-6	50-200	101
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-5	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	19:15
Data File Name:	2329-05	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	J 5U
15	Chloromethane	74-87-3	µg/L	5	0.8	J
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	0.8	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	100
2	Dibromofluoromethane	1868-53-7	79-120	107
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	104
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	93
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	104
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-6	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	13:18
Data File Name:	2329-06	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	92
2	Dibromofluoromethane	1868-53-7	75-124	100
3	1,2-Dichloroethane-d4	17060-07-0	75-129	89
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	89
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	94
3	Fluorobenzene	462-06-6	50-200	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-7	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-10**	Sample Matrix	Soil	Moisture %:	13.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	13:48
Data File Name:	2329-07	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.8	< 5.8	U
2	Bromobenzene	108-86-1	µg/kg	5.8	< 5.8	U
3	Bromochloromethane	74-97-5	µg/kg	5.8	< 5.8	U
4	Bromodichloromethane	75-27-4	µg/kg	5.8	< 5.8	U
5	Bromoform	75-25-2	µg/kg	5.8	< 5.8	U
6	Bromomethane	74-83-9	µg/kg	5.8	< 5.8	U
7	n-Butylbenzene	104-51-8	µg/kg	5.8	< 5.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.8	< 5.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.8	< 5.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.8	< 5.8	U
11	Chlorobenzene	108-90-7	µg/kg	5.8	< 5.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.8	< 5.8	U
13	Chloroethane	75-00-3	µg/kg	5.8	< 5.8	U
14	Chloroform	67-66-3	µg/kg	5.8	< 5.8	U
15	Chloromethane	74-87-3	µg/kg	5.8	< 5.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.8	< 5.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.8	< 5.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.8	< 5.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.8	< 5.8	U
20	Dibromomethane	74-95-3	µg/kg	5.8	< 5.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.8	< 5.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.8	< 5.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.8	< 5.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.8	< 5.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.8	< 5.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.8	< 5.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.8	< 5.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.8	< 5.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.8	< 5.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.8	< 5.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.8	< 5.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.8	< 5.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.8	< 5.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.8	< 5.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.8	< 5.8	U
36	Ethylbenzene	100-41-4	µg/kg	5.8	< 5.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.8	< 5.8	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.8	< 5.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.8	< 5.8	U

14653

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.8	< 5.8	U
41	Naphthalene	91-20-3	µg/kg	5.8	< 5.8	U
42	n-Propylbenzene	103-65-1	µg/kg	5.8	< 5.8	U
43	Styrene	100-42-5	µg/kg	5.8	< 5.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.8	< 5.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.8	< 5.8	U
46	Tetrachloroethene	127-18-4	µg/kg	5.8	6	
47	Toluene	108-88-3	µg/kg	5.8	< 5.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.8	< 5.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.8	< 5.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.8	< 5.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.8	< 5.8	U
52	Trichloroethene	79-01-6	µg/kg	5.8	10	
53	Trichlorofluoromethane	75-69-4	µg/kg	5.8	< 5.8	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.8	< 5.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.8	< 5.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.8	< 5.8	U
57	Vinyl chloride	75-01-4	µg/kg	5.8	< 5.8	U
58	o-Xylene	95-47-6	µg/kg	5.8	< 5.8	U
59	m/p-Xylene	108-38-3	µg/kg	5.8	< 5.8	U
60	Xylenes (total)	1330-20-7	µg/kg	5.8	< 5.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	92
2	Dibromofluoromethane	1868-53-7	75-124	100
3	1,2-Dichloroethane-d4	17060-07-0	75-129	93
4	Toluene-d8	2037-26-5	80-119	75
# of out-of-control				1

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	92
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	83
3	Fluorobenzene	462-06-6	50-200	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14654

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client N:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-8	Received Date:	03/08/1999
Sample I..	**99SY-S1NF-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	–	Anal. Time:	19:48
Data File Name:	2329-08	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	[illegible]	[illegible]
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

14658

M1659

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	107
2	Dibromofluoromethane	1868-53-7	79-120	109
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	107
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	92
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	96
3	Fluorobenzene	462-06-6	50-200	96
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14659

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/199
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-9	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-5**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	14:50
Data File Name:	2329-09	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.3	< 5.3	U
2	Bromobenzene	108-86-1	µg/kg	5.3	< 5.3	U
3	Bromochloromethane	74-97-5	µg/kg	5.3	< 5.3	U
4	Bromodichloromethane	75-27-4	µg/kg	5.3	< 5.3	U
5	Bromoform	75-25-2	µg/kg	5.3	< 5.3	U
6	Bromomethane	74-83-9	µg/kg	5.3	< 5.3	U
7	n-Butylbenzene	104-51-8	µg/kg	5.3	< 5.3	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.3	< 5.3	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.3	< 5.3	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.3	< 5.3	U
11	Chlorobenzene	108-90-7	µg/kg	5.3	< 5.3	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.3	< 5.3	U
13	Chloroethane	75-00-3	µg/kg	5.3	< 5.3	U
14	Chloroform	67-66-3	µg/kg	5.3	< 5.3	U
15	Chloromethane	74-87-3	µg/kg	5.3	< 5.3	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.3	< 5.3	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.3	< 5.3	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.3	< 5.3	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.3	< 5.3	U
20	Dibromomethane	74-95-3	µg/kg	5.3	< 5.3	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.3	< 5.3	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.3	< 5.3	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.3	< 5.3	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.3	< 5.3	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.3	< 5.3	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.3	< 5.3	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.3	< 5.3	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.3	< 5.3	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.3	< 5.3	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.3	< 5.3	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.3	< 5.3	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.3	< 5.3	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.3	< 5.3	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.3	< 5.3	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.3	< 5.3	U
36	Ethylbenzene	100-41-4	µg/kg	5.3	< 5.3	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.3	< 5.3	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.3	< 5.3	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.3	< 5.3	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.3	< 5.3	U
41	Naphthalene	91-20-3	µg/kg	5.3	< 5.3	U
42	n-Propylbenzene	103-65-1	µg/kg	5.3	< 5.3	U
43	Styrene	100-42-5	µg/kg	5.3	< 5.3	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.3	< 5.3	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.3	< 5.3	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.3	< 5.3	U
47	Toluene	108-88-3	µg/kg	5.3	< 5.3	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.3	< 5.3	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.3	< 5.3	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.3	< 5.3	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.3	< 5.3	U
52	Trichloroethene	79-01-6	µg/kg	5.3	< 5.3	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.3	< 5.3	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.3	< 5.3	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.3	< 5.3	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.3	< 5.3	U
57	Vinyl chloride	75-01-4	µg/kg	5.3	< 5.3	U
58	o-Xylene	95-47-6	µg/kg	5.3	< 5.3	U
59	m/p-Xylene	108-38-3	µg/kg	5.3	< 5.3	U
60	Xylenes (total)	1330-20-7	µg/kg	5.3	< 5.3	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	96
3	1,2-Dichloroethane-d4	17060-07-0	75-129	81
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	113
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	130
3	Fluorobenzene	462-06-6	50-200	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14664

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-10	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-10**	Sample Matrix	Soil	Moisture %:	18.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	15:21
Data File Name:	2329-10	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.1	<6.1	U
2	Bromobenzene	108-86-1	µg/kg	6.1	<6.1	U
3	Bromochloromethane	74-97-5	µg/kg	6.1	<6.1	U
4	Bromodichloromethane	75-27-4	µg/kg	6.1	<6.1	U
5	Bromoform	75-25-2	µg/kg	6.1	<6.1	U
6	Bromomethane	74-83-9	µg/kg	6.1	<6.1	U
7	n-Butylbenzene	104-51-8	µg/kg	6.1	<6.1	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.1	<6.1	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.1	<6.1	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.1	<6.1	U
11	Chlorobenzene	108-90-7	µg/kg	6.1	<6.1	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.1	<6.1	U
13	Chloroethane	75-00-3	µg/kg	6.1	<6.1	U
14	Chloroform	67-66-3	µg/kg	6.1	<6.1	U
15	Chloromethane	74-87-3	µg/kg	6.1	<6.1	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.1	<6.1	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.1	<6.1	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.1	<6.1	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.1	<6.1	U
20	Dibromomethane	74-95-3	µg/kg	6.1	<6.1	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.1	<6.1	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.1	<6.1	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.1	<6.1	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.1	<6.1	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.1	<6.1	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.1	<6.1	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.1	<6.1	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.1	<6.1	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.1	<6.1	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.1	<6.1	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.1	<6.1	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.1	<6.1	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.1	<6.1	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.1	<6.1	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.1	<6.1	U
36	Ethylbenzene	100-41-4	µg/kg	6.1	<6.1	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.1	<6.1	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.1	<6.1	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.1	<6.1	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.1	<6.1	U
41	Naphthalene	91-20-3	µg/kg	6.1	<6.1	U
42	n-Propylbenzene	103-65-1	µg/kg	6.1	<6.1	U
43	Styrene	100-42-5	µg/kg	6.1	<6.1	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.1	<6.1	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.1	<6.1	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	6.1	<6.1	U
47	Toluene	108-88-3	µg/kg	6.1	<6.1	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.1	<6.1	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.1	<6.1	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.1	<6.1	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.1	<6.1	U
52	Trichloroethene	79-01-6	µg/kg	6.1	<6.1	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.1	<6.1	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.1	<6.1	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.1	<6.1	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.1	<6.1	U
57	Vinyl chloride	75-01-4	µg/kg	6.1	<6.1	U
58	o-Xylene	95-47-6	µg/kg	6.1	<6.1	U
59	m/p-Xylene	108-38-3	µg/kg	6.1	<6.1	U
60	Xylenes (total)	1330-20-7	µg/kg	6.1	<6.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	93
3	1,2-Dichloroethane-d4	17060-07-0	75-129	80
4	Toluene-d8	2037-26-5	80-119	90
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	111
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	126
3	Fluorobenzene	462-06-6	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/28/99 14668

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-11	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	22:34
Data File Name:	2329-11	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	2	J
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	97
2	Dibromofluoromethane	1868-53-7	79-120	106
3	1,2-Dichloroethane-d4	17060-07-0	81-119	101
4	Toluene-d8	2037-26-5	81-118	97
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	99
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	110
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-13	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-10**	Sample Matrix	Soil	Moisture %:	16.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	16:22
Data File Name:	2329-13	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.0	<6.0	U
2	Bromobenzene	108-86-1	µg/kg	6.0	<6.0	U
3	Bromochloromethane	74-97-5	µg/kg	6.0	<6.0	U
4	Bromodichloromethane	75-27-4	µg/kg	6.0	<6.0	U
5	Bromoform	75-25-2	µg/kg	6.0	<6.0	U
6	Bromomethane	74-83-9	µg/kg	6.0	<6.0	U
7	n-Butylbenzene	104-51-8	µg/kg	6.0	<6.0	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.0	<6.0	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.0	<6.0	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.0	<6.0	U
11	Chlorobenzene	108-90-7	µg/kg	6.0	<6.0	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.0	<6.0	U
13	Chloroethane	75-00-3	µg/kg	6.0	<6.0	U
14	Chloroform	67-66-3	µg/kg	6.0	<6.0	U
15	Chloromethane	74-87-3	µg/kg	6.0	<6.0	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.0	<6.0	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.0	<6.0	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.0	<6.0	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.0	<6.0	U
20	Dibromomethane	74-95-3	µg/kg	6.0	<6.0	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.0	<6.0	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.0	<6.0	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.0	<6.0	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.0	<6.0	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.0	<6.0	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.0	<6.0	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.0	<6.0	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.0	<6.0	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.0	<6.0	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.0	<6.0	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.0	<6.0	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.0	<6.0	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.0	<6.0	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.0	<6.0	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.0	<6.0	U
36	Ethylbenzene	100-41-4	µg/kg	6.0	<6.0	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.0	<6.0	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.0	<6.0	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.0	<6.0	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.0	<6.0	U
41	Naphthalene	91-20-3	µg/kg	6.0	<6.0	U
42	n-Propylbenzene	103-65-1	µg/kg	6.0	<6.0	U
43	Styrene	100-42-5	µg/kg	6.0	<6.0	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.0	<6.0	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.0	<6.0	~~U~~ UJ
46	Tetrachloroethene	127-18-4	µg/kg	6.0	<6.0	U
47	Toluene	108-88-3	µg/kg	6.0	<6.0	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.0	<6.0	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.0	<6.0	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.0	<6.0	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.0	<6.0	U
52	Trichloroethene	79-01-6	µg/kg	6.0	<6.0	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.0	<6.0	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.0	<6.0	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.0	<6.0	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.0	<6.0	U
57	Vinyl chloride	75-01-4	µg/kg	6.0	<6.0	U
58	o-Xylene	95-47-6	µg/kg	6.0	<6.0	U
59	m/p-Xylene	108-38-3	µg/kg	6.0	<6.0	U
60	Xylenes (total)	1330-20-7	µg/kg	6.0	<6.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	95
3	1,2-Dichloroethane-d4	17060-07-0	75-129	85
4	Toluene-d8	2037-26-5	80-119	88
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	103
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	112
3	Fluorobenzene	462-06-6	50-200	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-12	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-5**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	15:52
Data File Name:	2329-12	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U/UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	81
4	Toluene-d8	2037-26-5	80-119	89
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	111
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	126
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-14	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: G
Anal. Method:	8260B	Prep. Date:	03/17/99	Anal. Date:	03/17/99
Batch No:	99G1971	Prep. No:	-	Anal. Time:	17:35
Data File Name:	2329-14	Sample Amount:	25 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	J 54
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	103
2	Dibromofluoromethane	1868-53-7	79-120	107
3	1,2-Dichloroethane-d4	17060-07-0	81-119	106
4	Toluene-d8	2037-26-5	81-118	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	94
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	101
3	Fluorobenzene	462-06-6	50-200	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-MI6c-S-5
99SY-MI6c-W-10
99SY-S1nf-S-5
99SY-S1nf-S-10
99SY-S1nf-W-9
99SY-S1ng-S-5
99SY-S1ng-S-10
99SY-S1ng-W-8.5
99SY-S1nh-S-5
99SY-S1nh-S-10
99SY-S1nh-W-9
99SY-S1nh-W-9MS
99SY-S1nh-W-9MSD

Introduction

This data review covers 7 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/22/99	2,4-Dinitrophenol 4-Nitroaniline	29.1 25.6	99SY-S1ng-W-8.5	J J	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-S1nh-W-9MS/MSD (All water samples in SDG 99-2329)	Pentachlorophenol	8 (15-148)	9 (15-148)	-	J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
99SY-S1nf-S-10	Perylene-d12	193537 (304809-1219236)	Di-n-octylphthalate	J	P
			Benzo(b)fluoranthene	J	
			Benzo(k)fluoranthene	J	
			Benzo(a)pyrene	J	
			Indeno(1,2,3-cd)pyrene	J	
			Dibenz(a,h)anthracene	J	
			Benzo(g,h,i)perylene	J	

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2329

SDG	Sample	Compound	Flag	A or P	Reason
99-2329	99SY-S1ng-W-8.5	2,4-Dinitrophenol 4-Nitroaniline	J J	A	Continuing calibration (%D)
99-2329	99SY-MI6c-W-10 99SY-S1nf-W-9 99SY-S1ng-W-8.5 99SY-S1nh-W-9	Pentachlorophenol	J	A	Matrix spike/Matrix spike duplicates (%R)
99-2329	99SY-S1nf-S-10	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J J J J J J J	P	Internal standards (area)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-4	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-S-5**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	21:54
Data File Name:	2329-04	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	590	< 590	U
2	Acenaphthylene	208-96-8	µg/kg	590	< 590	U
3	Anthracene	120-12-7	µg/kg	590	< 590	U
4	Benz(a)anthracene	56-55-3	µg/kg	590	< 590	U
5	Benzo(a)pyrene	50-32-8	µg/kg	590	< 590	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	590	< 590	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	590	< 590	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	590	< 590	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	590	< 590	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	590	< 590	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	590	< 590	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	590	< 590	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	590	< 590	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	590	< 590	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	590	< 590	U
18	2-Chlorophenol	95-57-8	µg/kg	590	< 590	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	590	< 590	U
20	Chrysene	218-01-9	µg/kg	590	< 590	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	590	< 590	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	590	< 590	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	590	< 590	U
24	Dibenzofuran	132-64-9	µg/kg	590	< 590	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	590	< 590	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	590	< 590	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	590	< 590	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	590	< 590	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	590	< 590	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	590	< 590	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	590	< 590	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	590	< 590	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	590	< 590	U
37	Fluoranthene	206-44-0	µg/kg	590	< 590	U
38	Fluorene	86-73-7	µg/kg	590	< 590	U
39	Hexachlorobenzene	118-74-1	µg/kg	590	< 590	U
40	Hexachlorobutadiene	87-68-3	µg/kg	590	< 590	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	590	< 590	U
42	Hexachloroethane	67-72-1	µg/kg	590	< 590	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	590	< 590	U
44	Isophorone	78-59-1	µg/kg	590	< 590	U
45	2-Methylnaphthalene	91-57-6	µg/kg	590	< 590	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	590	< 590	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	590	< 590	U
48	Naphthalene	91-20-3	µg/kg	590	< 590	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	< 3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	< 3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	< 3000	U
52	Nitrobenzene	98-95-3	µg/kg	590	< 590	U
53	2-Nitrophenol	88-75-5	µg/kg	590	< 590	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	< 3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	590	< 590	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	590	< 590	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	< 3000	U
58	Phenanthrene	85-01-8	µg/kg	590	< 590	U
59	Phenol	108-95-2	µg/kg	590	< 590	U
60	Pyrene	129-00-0	µg/kg	590	< 590	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	590	< 590	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	590	< 590	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	590	< 590	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	63
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	56
5	Terphenyl-d14	1718-51-0	18-136	60
6	2,4,6-Tribromophenol	118-79-6	20-119	57
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	107
2	Chrysene-d12	1719-03-5	50-200	123
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	102
4	Naphthalene-d8	1146-65-2	50-200	109
5	Perylene-d12	1520-96-3	50-200	107
6	Phenanthrene-d10	1517-22-2	50-200	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-5	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/21/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	17:37
Data File Name:	2329-05A	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	60
2	2-Fluorophenol	367-12-4	21- 99	26
3	Nitrobenzene-d5	4165-60-0	35-113	66
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	108
6	2,4,6-Tribromophenol	118-79-6	10-122	62
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	108
2	Chrysene-d12	1719-03-5	50-200	73
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
4	Naphthalene-d8	1146-65-2	50-200	102
5	Perylene-d12	1520-96-3	50-200	89
6	Phenanthrene-d10	1517-22-2	50-200	110
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-6	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	22:33
Data File Name:	2329-06	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	66
2	2-Fluorophenol	367-12-4	25-103	57
3	Nitrobenzene-d5	4165-60-0	23-119	65
4	Phenol-d5	4165-62-2	24-112	58
5	Terphenyl-d14	1718-51-0	18-136	65
6	2,4,6-Tribromophenol	118-79-6	20-119	58
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	102
2	Chrysene-d12	1719-03-5	50-200	115
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	99
4	Naphthalene-d8	1146-65-2	50-200	107
5	Perylene-d12	1520-96-3	50-200	98
6	Phenanthrene-d10	1517-22-2	50-200	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-7	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-10**	Sample Matrix	Soil	Moisture %:	13.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	15:07
Data File Name:	2329-07	Sample Amount:	30.0 g	Dilution Factor:	4
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	2300	< 2300	U
2	Acenaphthylene	208-96-8	µg/kg	2300	< 2300	U
3	Anthracene	120-12-7	µg/kg	2300	< 2300	U
4	Benz(a)anthracene	56-55-3	µg/kg	2300	< 2300	U
5	Benzo(a)pyrene	50-32-8	µg/kg	2300	< 2300	~~U~~ UJ
6	Benzo(b)fluoranthene	205-99-2	µg/kg	2300	< 2300	~~U~~ UJ
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	2300	< 2300	~~U~~ UJ
8	Benzo(k)fluoranthene	207-08-9	µg/kg	2300	< 2300	~~U~~ UJ
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	2300	< 2300	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	2300	< 2300	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	2300	< 2300	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	2300	< 2300	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	2300	< 2300	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	2300	< 2300	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	4600	< 4600	U
16	4-Chloroaniline	106-47-8	µg/kg	4600	< 4600	U
17	2-Chloronaphthalene	91-58-7	µg/kg	2300	< 2300	U
18	2-Chlorophenol	95-57-8	µg/kg	2300	< 2300	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	2300	< 2300	U
20	Chrysene	218-01-9	µg/kg	2300	< 2300	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	2300	< 2300	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	2300	< 2300	~~U~~ UJ
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	2300	< 2300	~~U~~ UJ
24	Dibenzofuran	132-64-9	µg/kg	2300	< 2300	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	2300	< 2300	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	2300	< 2300	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	2300	< 2300	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	4600	< 4600	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	2300	< 2300	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	2300	< 2300	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	2300	< 2300	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	2300	< 2300	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	12000	< 12000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	12000	< 12000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	2300	< 2300	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	2300	< 2300	U
37	Fluoranthene	206-44-0	µg/kg	2300	< 2300	U
38	Fluorene	86-73-7	µg/kg	2300	< 2300	U
39	Hexachlorobenzene	118-74-1	µg/kg	2300	< 2300	U
40	Hexachlorobutadiene	87-68-3	µg/kg	2300	< 2300	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	2300	< 2300	U
42	Hexachloroethane	67-72-1	µg/kg	2300	< 2300	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	2300	< 2300	U UJ
44	Isophorone	78-59-1	µg/kg	2300	< 2300	U
45	2-Methylnaphthalene	91-57-6	µg/kg	2300	< 2300	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	2300	< 2300	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	2300	< 2300	U
48	Naphthalene	91-20-3	µg/kg	2300	< 2300	U
49	2-Nitroaniline	88-74-4	µg/kg	12000	< 12000	U
50	3-Nitroaniline	99-09-2	µg/kg	12000	< 12000	U
51	4-Nitroaniline	100-01-6	µg/kg	12000	< 12000	U
52	Nitrobenzene	98-95-3	µg/kg	2300	< 2300	U
53	2-Nitrophenol	88-75-5	µg/kg	2300	< 2300	U
54	4-Nitrophenol	100-02-7	µg/kg	12000	< 12000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	2300	< 2300	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	2300	< 2300	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	12000	< 12000	U
58	Phenanthrene	85-01-8	µg/kg	2300	< 2300	U
59	Phenol	108-95-2	µg/kg	2300	< 2300	U
60	Pyrene	129-00-0	µg/kg	2300	< 2300	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	2300	< 2300	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	2300	< 2300	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	2300	< 2300	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	73
2	2-Fluorophenol	367-12-4	25-103	45
3	Nitrobenzene-d5	4165-60-0	23-119	60
4	Phenol-d5	4165-62-2	24-112	53
5	Terphenyl-d14	1718-51-0	18-136	83
6	2,4,6-Tribromophenol	118-79-6	20-119	58
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	85
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
4	Naphthalene-d8	1146-65-2	50-200	80
5	Perylene-d12	1520-96-3	50-200	32
6	Phenanthrene-d10	1517-22-2	50-200	85
# of out-of-control				1

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14942

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-8	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/20/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	00:17
Data File Name:	2329-08	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	71
2	2-Fluorophenol	367-12-4	21- 99	49
3	Nitrobenzene-d5	4165-60-0	35-113	71
4	Phenol-d5	4165-62-2	10- 93	28
5	Terphenyl-d14	1718-51-0	33-140	131
6	2,4,6-Tribromophenol	118-79-6	10-122	66
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	121
2	Chrysene-d12	1719-03-5	50-200	90
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	113
4	Naphthalene-d8	1146-65-2	50-200	122
5	Perylene-d12	1520-96-3	50-200	108
6	Phenanthrene-d10	1517-22-2	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-9	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-5**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	23:12
Data File Name:	2329-09	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benz(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	530	< 530	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	530	< 530	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	530	< 530	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	530	< 530	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
18	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	530	< 530	U
20	Chrysene	218-01-9	µg/kg	530	< 530	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	530	< 530	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	530	< 530	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
24	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	530	< 530	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	530	< 530	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	530	< 530	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	530	< 530	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	530	< 530	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2700	< 2700	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2700	< 2700	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
37	Fluoranthene	206-44-0	µg/kg	530	< 530	U
38	Fluorene	86-73-7	µg/kg	530	< 530	U
39	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U
40	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
42	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
44	Isophorone	78-59-1	µg/kg	530	< 530	U
45	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	530	< 530	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	530	< 530	U
48	Naphthalene	91-20-3	µg/kg	530	< 530	U
49	2-Nitroaniline	88-74-4	µg/kg	2700	< 2700	U
50	3-Nitroaniline	99-09-2	µg/kg	2700	< 2700	U
51	4-Nitroaniline	100-01-6	µg/kg	2700	< 2700	U
52	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
53	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
54	4-Nitrophenol	100-02-7	µg/kg	2700	< 2700	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	530	< 530	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2700	< 2700	U
58	Phenanthrene	85-01-8	µg/kg	530	< 530	U
59	Phenol	108-95-2	µg/kg	530	< 530	U
60	Pyrene	129-00-0	µg/kg	530	< 530	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	530	< 530	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	56
2	2-Fluorophenol	367-12-4	25-103	50
3	Nitrobenzene-d5	4165-60-0	23-119	56
4	Phenol-d5	4165-62-2	24-112	50
5	Terphenyl-d14	1718-51-0	18-136	52
6	2,4,6-Tribromophenol	118-79-6	20-119	42
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	94
2	Chrysene-d12	1719-03-5	50-200	106
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	126
4	Naphthalene-d8	1146-65-2	50-200	121
5	Perylene-d12	1520-96-3	50-200	89
6	Phenanthrene-d10	1517-22-2	50-200	99
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-10	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-10**	Sample Matrix	Soil	Moisture %:	18.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/17/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	23:50
Data File Name:	2329-10	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	610	< 610	U
2	Acenaphthylene	208-96-8	µg/kg	610	< 610	U
3	Anthracene	120-12-7	µg/kg	610	< 610	U
4	Benz(a)anthracene	56-55-3	µg/kg	610	< 610	U
5	Benzo(a)pyrene	50-32-8	µg/kg	610	< 610	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	610	< 610	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	610	< 610	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	610	< 610	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	610	< 610	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	610	< 610	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	610	< 610	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	610	< 610	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	610	< 610	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	610	< 610	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	610	< 610	U
18	2-Chlorophenol	95-57-8	µg/kg	610	< 610	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	610	< 610	U
20	Chrysene	218-01-9	µg/kg	610	< 610	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	610	< 610	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	610	< 610	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	610	< 610	U
24	Dibenzofuran	132-64-9	µg/kg	610	< 610	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	610	< 610	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	610	< 610	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	610	< 610	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	610	< 610	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	610	< 610	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	610	< 610	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	610	< 610	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3100	< 3100	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3100	< 3100	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	610	< 610	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	610	< 610	U
37	Fluoranthene	206-44-0	µg/kg	610	< 610	U
38	Fluorene	86-73-7	µg/kg	610	< 610	U
39	Hexachlorobenzene	118-74-1	µg/kg	610	< 610	U
40	Hexachlorobutadiene	87-68-3	µg/kg	610	< 610	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	610	<610	U
42	Hexachloroethane	67-72-1	µg/kg	610	<610	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	610	<610	U
44	Isophorone	78-59-1	µg/kg	610	<610	U
45	2-Methylnaphthalene	91-57-6	µg/kg	610	<610	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	610	<610	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	610	<610	U
48	Naphthalene	91-20-3	µg/kg	610	<610	U
49	2-Nitroaniline	88-74-4	µg/kg	3100	<3100	U
50	3-Nitroaniline	99-09-2	µg/kg	3100	<3100	U
51	4-Nitroaniline	100-01-6	µg/kg	3100	<3100	U
52	Nitrobenzene	98-95-3	µg/kg	610	<610	U
53	2-Nitrophenol	88-75-5	µg/kg	610	<610	U
54	4-Nitrophenol	100-02-7	µg/kg	3100	<3100	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	610	<610	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	610	<610	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3100	<3100	U
58	Phenanthrene	85-01-8	µg/kg	610	<610	U
59	Phenol	108-95-2	µg/kg	610	<610	U
60	Pyrene	129-00-0	µg/kg	610	<610	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	610	<610	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	610	<610	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	610	<610	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	52
2	2-Fluorophenol	367-12-4	25-103	46
3	Nitrobenzene-d5	4165-60-0	23-119	53
4	Phenol-d5	4165-62-2	24-112	46
5	Terphenyl-d14	1718-51-0	18-136	50
6	2,4,6-Tribromophenol	118-79-6	20-119	43
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	131
2	Chrysene-d12	1719-03-5	50-200	155
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	127
4	Naphthalene-d8	1146-65-2	50-200	134
5	Perylene-d12	1520-96-3	50-200	135
6	Phenanthrene-d10	1517-22-2	50-200	145
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

14959

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-11	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/22/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	12:48
Data File Name:	2329-11B	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	UJ
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	~~U~~ UJ
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	60
2	2-Fluorophenol	367-12-4	21- 99	50
3	Nitrobenzene-d5	4165-60-0	35-113	69
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	106
6	2,4,6-Tribromophenol	118-79-6	10-122	64
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	119
2	Chrysene-d12	1719-03-5	50-200	82
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	111
5	Perylene-d12	1520-96-3	50-200	105
6	Phenanthrene-d10	1517-22-2	50-200	122
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-12	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-5**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	00:29
Data File Name:	2329-12	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	59
2	2-Fluorophenol	367-12-4	25-103	55
3	Nitrobenzene-d5	4165-60-0	23-119	61
4	Phenol-d5	4165-62-2	24-112	54
5	Terphenyl-d14	1718-51-0	18-136	56
6	2,4,6-Tribromophenol	118-79-6	20-119	50
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	120
2	Chrysene-d12	1719-03-5	50-200	136
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	113
4	Naphthalene-d8	1146-65-2	50-200	120
5	Perylene-d12	1520-96-3	50-200	120
6	Phenanthrene-d10	1517-22-2	50-200	126
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank.
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-13	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-10**	Sample Matrix	Soil	Moisture %:	16.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: D
Anal. Method:	8270C	Prep. Date:	03/09/99	Anal. Date:	03/18/99
Batch No:	99G1856	Prep. No:	1 of 1	Anal. Time:	01:08
Data File Name:	2329-13	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	600	< 600	U
2	Acenaphthylene	208-96-8	µg/kg	600	< 600	U
3	Anthracene	120-12-7	µg/kg	600	< 600	U
4	Benz(a)anthracene	56-55-3	µg/kg	600	< 600	U
5	Benzo(a)pyrene	50-32-8	µg/kg	600	< 600	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	600	< 600	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	600	< 600	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	600	< 600	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	600	< 600	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	600	< 600	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	600	< 600	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	600	< 600	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	600	< 600	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	600	< 600	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	600	< 600	U
18	2-Chlorophenol	95-57-8	µg/kg	600	< 600	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	600	< 600	U
20	Chrysene	218-01-9	µg/kg	600	< 600	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	600	< 600	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	600	< 600	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	600	< 600	U
24	Dibenzofuran	132-64-9	µg/kg	600	< 600	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	600	< 600	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	600	< 600	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	600	< 600	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	600	< 600	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	600	< 600	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	600	< 600	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	600	< 600	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	600	< 600	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	600	< 600	U
37	Fluoranthene	206-44-0	µg/kg	600	< 600	U
38	Fluorene	86-73-7	µg/kg	600	< 600	U
39	Hexachlorobenzene	118-74-1	µg/kg	600	< 600	U
40	Hexachlorobutadiene	87-68-3	µg/kg	600	< 600	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	600	< 600	U
42	Hexachloroethane	67-72-1	µg/kg	600	< 600	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	600	< 600	U
44	Isophorone	78-59-1	µg/kg	600	< 600	U
45	2-Methylnaphthalene	91-57-6	µg/kg	600	< 600	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	600	< 600	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	600	< 600	U
48	Naphthalene	91-20-3	µg/kg	600	< 600	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	< 3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	< 3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	< 3000	U
52	Nitrobenzene	98-95-3	µg/kg	600	< 600	U
53	2-Nitrophenol	88-75-5	µg/kg	600	< 600	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	< 3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	600	< 600	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	600	< 600	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	< 3000	U
58	Phenanthrene	85-01-8	µg/kg	600	< 600	U
59	Phenol	108-95-2	µg/kg	600	< 600	U
60	Pyrene	129-00-0	µg/kg	600	< 600	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	600	< 600	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	600	< 600	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	600	< 600	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	66
2	2-Fluorophenol	367-12-4	25-103	58
3	Nitrobenzene-d5	4165-60-0	23-119	66
4	Phenol-d5	4165-62-2	24-112	58
5	Terphenyl-d14	1718-51-0	18-136	61
6	2,4,6-Tribromophenol	118-79-6	20-119	56
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	107
2	Chrysene-d12	1719-03-5	50-200	124
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	100
4	Naphthalene-d8	1146-65-2	50-200	108
5	Perylene-d12	1520-96-3	50-200	107
6	Phenanthrene-d10	1517-22-2	50-200	114
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-14	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/19/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	21:53
Data File Name:	2329-14	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	2	J
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

14981

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	77
2	2-Fluorophenol	367-12-4	21- 99	59
3	Nitrobenzene-d5	4165-60-0	35-113	79
4	Phenol-d5	4165-62-2	10- 93	35
5	Terphenyl-d14	1718-51-0	33-140	131
6	2,4,6-Tribromophenol	118-79-6	10-122	79
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	81
2	Chrysene-d12	1719-03-5	50-200	61
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	106
4	Naphthalene-d8	1146-65-2	50-200	89
5	Perylene-d12	1520-96-3	50-200	72
6	Phenanthrene-d10	1517-22-2	50-200	83
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

NW4599
14982

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 14, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-S1nf-S-5
99SY-S1nf-S-10**
99SY-S1nf-W-9
99SY-S1ng-S-5
99SY-S1ng-S-10
99SY-S1ng-W-8.5
99SY-S1nh-S-5
99SY-S1nh-S-10**
99SY-S1nh-W-9
99SY-S1nf-S-5MS
99SY-S1nf-S-5MSD
99SY-S1nh-W-9MS
99SY-S1nh-W-9MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 8 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99SY-S1nf-S-10**	4-Bromofluorobenzene	633 (52-149)	TPH as gasoline	J (all detects)	A

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
99SY-S1nf-S-10**	TPH as gasoline	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	P

Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2329

SDG	Sample	Compound	Flag	A or P	Reason
99-2329	99SY-S1nf-S-10**	TPH as gasoline	J (all detects)	A	Surrogate recovery (%R)
99-2329	99SY-S1nf-S-10**	TPH as gasoline	J (all detects)	P	Compound quantitation and CRQLs

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

J

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-6	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1860	Prep. No:	-	Anal. Time:	16:28
Data File Name:	2329.006	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	0.2	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	103
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-7	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-10**	Sample Matrix	Soil	Moisture %:	13.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/22/99	Anal. Date:	03/22/99
Batch No:	99G2014	Prep. No:	-	Anal. Time:	18:04
Data File Name:	2329.107	Sample Amount:	1.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	80 (a)	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	633
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

15275

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-8	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1871	Prep. No:	–	Anal. Time:	04:36
Data File Name:	2329.008	Sample Amount:	5.00 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		54-133	96	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-9	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-5**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1860	Prep. No:	-	Anal. Time:	17:14
Data File Name:	2329.009	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	104
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-10	Received Date:	03/08/1999
Sample ID:	99SY-S1NG-S-10	Sample Matrix	Soil	Moisture %:	18.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1860	Prep. No:	-	Anal. Time:	17:37
Data File Name:	2329.010	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	<1.2	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	98
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-11	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1871	Prep. No:	-	Anal. Time:	11:44
Data File Name:	2329.011	Sample Amount:	5.00 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.09	
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		54-133	95	
# of out-of-control					0	

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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15283

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/199
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-12	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-5**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1860	Prep. No:	–	Anal. Time:	18:01
Data File Name:	2329.012	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	< 1.0	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		52-149	113	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

15285

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-13	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-10**	Sample Matrix	Soil	Moisture %:	16.5
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: U
Anal. Method:	M8015V	Prep. Date:	03/09/99	Anal. Date:	03/09/99
Batch No:	99G1860	Prep. No:	–	Anal. Time:	19:10
Data File Name:	2329.013	Sample Amount:	5.00 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	< 1.2	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	100
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

15287

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-14	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1871	Prep. No:	-	Anal. Time:	04:11
Data File Name:	2329.014	Sample Amount:	5.00 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		54-133	97	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

15289

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-Ml6c-S-5**
99SY-Ml6c-W-10**
99SY-S1nf-S-5
99SY-S1nf-S-10**
99SY-S1nf-W-9
99SY-S1ng-S-5
99SY-S1ng-S-10
99SY-S1ng-W-8.5
99SY-S1nh-S-5
99SY-S1nh-S-10
99SY-S1nh-W-9
99SY-S1nh-W-9MS
99SY-S1nh-W-9MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 7 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

J

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-4	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-S-5**	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/10/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	23:48
Data File Name:	2329.004	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	104
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

15418

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-5	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	04:11
Data File Name:	2329.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w41699

15420

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-6	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-5**	Sample Matrix	Soil	Moisture %:	6.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	00:13
Data File Name:	2329.006	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

15422

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-7	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-S-10**	Sample Matrix	Soil	Moisture %:	13.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	00:38
Data File Name:	2329.007	Sample Amount:	20.0 g	Dilution Factor:	10
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	120	70	J
2	Motor oil		mg/kg	120	1400	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	48
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

N 4/16/99

15424

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-8	Received Date:	03/08/1999
Sample ID:	**99SY-S1NF-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	04:38
Data File Name:	2329.008	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.09	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	118
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

15426

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-9	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-5**	Sample Matrix	Soil	Moisture %:	5.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	15:54
Data File Name:	2329.109	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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15428

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-10	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-S-10**	Sample Matrix	Soil	Moisture %:	18.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	01:53
Data File Name:	2329.010	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	111
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

15430

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-11	Received Date:	03/08/1999
Sample ID:	**99SY-S1NG-W-8.5**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	05:04
Data File Name:	2329.011	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.08	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	119
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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15432

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Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-12	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-5**	Sample Matrix	Soil	Moisture %:	3.3
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	02:18
Data File Name:	2329.012	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	106
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

15434

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-13	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-S-10**	Sample Matrix	Soil	Moisture %:	16.5
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: H
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1857	Prep. No:	1 of 1	Anal. Time:	02:43
Data File Name:	2329.013	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

m 4/6/99

15436

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-14	Received Date:	03/08/1999
Sample ID:	**99SY-S1NH-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: J
Anal. Method:	M8015E	Prep. Date:	03/09/99	Anal. Date:	03/11/99
Batch No:	99G1866	Prep. No:	1 of 1	Anal. Time:	05:30
Data File Name:	2329.014	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w41699

15438

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver CO

Project Name/Code LBNSY AOCs | Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

Field Sample ID No.	Sample Description	Date Collected	Time	Sample Matrix	Preservation	# of Containers	VOCs 8260B	Metals 6010C	SVOCs 8270C	TPH-ext. 8015	TPH-Pet 8015	Remarks
	995Y-M1Db-S-2	3/8/99	0940	Soil	4°C	2	X	X				use tube labeled "for 11", use "1/2 full" only if needed
	995Y-M1Db-W-10.8		0955	water	Metals-HNO3 VOCs-HCl	3	X	X				
	995Y-S1nf-S-5		1100	soil	4°C	2	X		X	X	X	
	995Y-S1nf-S-10		1105	soil	4°C	2	X		X	X	X	use end of liner labeled "← This end"-oily
	995Y-S1nf-W-9		1115	water	VOA vials: HCl	6	X		X	X	X	
	995Y-S1ng-S-5		~~1145~~ 1145 EB	soil	4°C	2	X		X	X	X	
	995Y-S1ng-S-10		1155	soil	4°C	2	X		X	X	X	
	995Y-S1ng-W-8.5		1210	water	VOA vials: HCl	6	X		X	X	X	
	995Y-S1nh-S-5		~~1245~~ 1245 EB	soil	4°C	4	X		X	X	X	MS/MSD
	995Y-S1nh-S-10		~~1310~~ 1255 EB	soil	4°C	2	X		X	X	X	Use end of liner labeled "← This end"
	995Y-S1nh-W-9		1310	water	VOA vials: HCl	18	X		X	X	X	MS/MSD
	995Y-BT1u-W-10		1420	Water	HCl	2	X					
	995Y-MI6c-S-5		1455	soil	4°C	2	X	X	X	X		
	995Y-MI6c-W-10		1540	Water	HCl	2	X					

White - With report
Yellow - Lab copy
Pink - Originator

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by _____ Date/Time / 1645 Received by _____ Date/Time /

Relinquished by _____ Date/Time / Received by _____ Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

CHAIN 2-03-OR-99

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St, Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver CO

Project Name/Code LBNSY AOCs | Job #6210-014 | P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: SVOCs 8270C	TPH-ext. 8015	Metals 6010C	Remarks
	995Y-MI6C-W-10	3/8/99	1540	Water	HNO3/4°C	3	X	X	X	
	BBoyd									

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by [illegible] Date/Time 3/8/99 / 1640 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 8, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-M1Db-S-2
99SY-M1Db-W-10.8
99SY-MI6c-S-5
99SY-MI6c-W-10

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Copper	0.048 mg/Kg	All soil samples in SDG 99-2329
ICB/CCB	Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Selenium Silver Vanadium Zinc Molybdenum	1.7 ug/L 2.8 ug/L 0.3 ug/L 0.4 ug/L 1.5 ug/L 1.5 ug/L 2.2 ug/L 1.9 ug/L 2.3 ug/L 0.6 ug/L 0.9 ug/L 2.4 ug/L 1.2 ug/L	All soil samples in SDG 99-2329
PB (prep blank)	Chromium Copper Nickel Silver	0.59 ug/L 0.95 ug/L 0.82 ug/L 0.61 ug/L	All water samples in SDG 99-2329

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Thallium Vanadium Zinc Molybdenum	1.3 ug/L 2.5 ug/L 2.8 ug/L 0.3 ug/L 0.4 ug/L 1.5 ug/L 1.6 ug/L 2.2 ug/L 1.9 ug/L 0.6 ug/L 4.4 ug/L 1.1 ug/L 2.4 ug/L 2.1 ug/L	All water samples in SDG 99-2329

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-M1Db-S-2	Cadmium	0.037 mg/Kg	0.037U mg/Kg
99SY-MI6c-S-5	Cadmium Selenium	0.023 mg/Kg 0.41 mg/Kg	0.023U mg/Kg 0.41U mg/Kg
99SY-M1Db-W-10.8	Arsenic Cobalt	2.9 ug/L 7.5 ug/L	2.9U ug/L 7.5U ug/L
99SY-MI6c-W-10	Cobalt Nickel Zinc	1.1 ug/L 6.5 ug/L 11.5 ug/L	1.1U ug/L 6.5U ug/L 11.5U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 99-2329	Mercury	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-HI9a-W-5MS/MSD (All water samples in SDG 99-2329)	Barium	74 (75-125)	73 (75-125)	-	J	A
	Cobalt	71 (75-125)	70 (75-125)	-	J	
	Lead	70 (75-125)	69 (75-125)	-	J	
	Molybdenum	74 (75-125)	73 (75-125)	-	J	
	Nickel	73 (75-125)	72 (75-125)	-	J	
	Thallium	64 (75-125)	63 (75-125)	-	J	
99SY-US4h-S-3MS/MSD (All soil samples in SDG 99-2329)	Cadmium	158 (75-125)	156 (75-125)	-	J (all detects)	A
	Lead	209 (75-125)	210 (75-125)	-	J (all detects)	
	Selenium	128 (75-125)	-	-	J (all detects)	

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All soil samples in SDG 99-2329	Mercury	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2329

SDG	Sample	Analyte	Flag	A or P	Reason
99-2329	99SY-M1Db-S-2 99SY-MI6c-S-5	Mercury	None	P	Matrix spike/Matrix spike duplicates
99-2329	99SY-M1Db-W-10.8 99SY-MI6c-W-10	Barium Cobalt Lead Molybdenum Nickel Thallium	J J J J J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2329	99SY-M1Db-S-2 99SY-MI6c-S-5	Cadmium Lead Selenium	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2329	99SY-M1Db-S-2 99SY-MI6c-S-5	Mercury	None	P	Duplicate sample analysis

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2329

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2329	99SY-M1Db-S-2	Cadmium	0.037U mg/Kg	A
99-2329	99SY-MI6c-S-5	Cadmium Selenium	0.023U mg/Kg 0.41U mg/Kg	A
99-2329	99SY-M1Db-W-10.8	Arsenic Cobalt	2.9U ug/L 7.5U ug/L	A
99-2329	99SY-MI6c-W-10	Cobalt Nickel Zinc	1.1U ug/L 6.5U ug/L 11.5U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-2	Received Date:	03/08/1999
Sample ID:	**99SY-M1DB-S-2**	Sample Matrix	Soil	Moisture %:	2.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.1	0.49	B	P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	1.5		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	89.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.20	<0.0043	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.20	0.037	~~B~~	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.51	24.6		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.51	6.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.51	16.1		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	4.6		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.20	0.021	B	CV		99M1448N	03/12/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.20	3.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	11.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.51	0.61		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.51	<0.016	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.1	<0.072	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.51	20.8		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.51	35.0		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-4	Received Date:	03/08/1999
Sample ID:	99SY-MI6C-S-5	Sample Matrix	Soil	Moisture %:	15.8
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.9	0.21	B	P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.36	2.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.2	29.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.24	< 0.0050	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.24	0.023	~~B~~	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.59	8.8		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.59	4.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.59	5.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.36	3.1		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.24	< 0.058	U	CV		99M1448N	03/12/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.24	< 0.028	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.36	6.2		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.59	0.41	~~B~~	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.59	< 0.019	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.9	< 0.083	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.59	20.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.59	23.9		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

MI6C

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-3	Received Date:	03/08/1999
Sample ID:	**99SY-M1DB-W-10.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	2.9	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	207		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	10.3		P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	7.5		P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	11.8		P		99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	22.1		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	12.6		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	2.4	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	U	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	17.8		P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	39.5		P		99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/08/1999
Project ID:	LBNSY AOCs	Service ID:	992329	Collected by:	BB/DB
		Lab Sample ID:	99-2329-5	Received Date:	03/08/1999
Sample ID:	**99SY-MI6C-W-10**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	<1.2	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	µg/L	5	<1.3	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	µg/L	10	100		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	µg/L	2	<0.083	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	µg/L	2	<0.25	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	µg/L	5	<0.40	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	µg/L	5	1.1	~~B~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	µg/L	10	<0.69	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	µg/L	5	<0.85	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	14.4		P	J	99M1427M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	µg/L	5	6.5		P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	µg/L	10	6.0	B	P		99M1427M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	µg/L	10	<0.32	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	µg/L	10	<1.4	~~U~~	P	UJ	99M1427M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	µg/L	10	<0.41	U	P		99M1427M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	µg/L	5	11.5		P	J	99M1427M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

N 4/19/99

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 8, 1999

LDC Report Date: April 9, 1999

Matrix: Soil

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2329

Sample Identification

99SY-M1Db-S-2
99SY-Ml6c-S-5
99SY-S1nf-S-5
99SY-S1nf-S-10
99SY-S1ng-S-5
99SY-S1ng-S-10
99SY-S1nh-S-5
99SY-S1nh-S-10

Introduction

This data review covers 8 soil samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9045 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Not applicable to this method.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 99-2329	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2329

SDG	Sample	Analyte	Flag	A or P	Reason
99-2329	99SY-M1Db-S-2 99SY-MI6c-S-5 99SY-S1nf-S-5 99SY-S1nf-S-10 99SY-S1ng-S-5 99SY-S1ng-S-10 99SY-S1nh-S-5 99SY-S1nh-S-10	pH	None	P	Matrix spike/(Matrix spike) duplicates

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2329

No Sample Data Qualified in this SDG

J

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992329 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2329-2	99SY-M1DB-S-2	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	8.23	
99-2329-4	99SY-MI6C-S-5	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	7.02	
99-2329-6	99SY-S1NF-S-5	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	8.31	
99-2329-7	99SY-S1NF-S-10	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	6.98	
99-2329-9	99SY-S1NG-S-5	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	7.52	
99-2329-10	99SY-S1NG-S-10	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	7.18	
99-2329-12	99SY-S1NH-S-5	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	7.88	
99-2329-13	99SY-S1NH-S-10	Soil	03/08/99	03/08/99	03/09/99	99W2388	pH unit	0.01	7.48	
99W2388-MB-01		Soil	03/09/99	03/09/99	03/09/99	99W2388	pH unit	0.01	6.07	

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 14, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-BT1v-W-8
99SY-MI6d-S-5
99SY-MI6d-W-10.6
99SY-MI8c-S-2
99SY-MI8c-W-12
99SY-MI8g-S-5
99SY-MI8g-W-9
99SY-BT1v-W-8MS
99SY-BT1v-W-8MSD

Introduction

This data review covers 3 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/15/99	1,1,2,2-Tetrachloroethane	27.4	All soil samples in SDG 99-2367	J	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1v-W-8 was identified as a trip blank. No volatile contaminants were

found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-BT1v-W-8	3/9/99	Chloroform	15 ug/L	99SY-MI6d-S-5 99SY-MI6d-W-10.6 99SY-MI8c-S-2 99SY-MI8c-W-12 99SY-MI8g-S-5 99SY-MI8g-W-9

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All soil samples in SDG 99-2367	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2367

SDG	Sample	Compound	Flag	A or P	Reason
99-2367	99SY-MI6d-S-5 99SY-MI8c-S-2 99SY-MI8g-S-5	1,1,2,2-Tetrachloroethane	J	A	Continuing calibration (%D)
99-2367	99SY-MI6d-S-5 99SY-MI8c-S-2 99SY-MI8g-S-5	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-1	Received Date:	03/09/1999
Sample ID:	**99SY-BT1V -W-8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1978	Prep. No:	-	Anal. Time:	06:46
Data File Name:	2367-01	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	15	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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3/24/99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	88
2	Dibromofluoromethane	1868-53-7	79-120	102
3	1,2-Dichloroethane-d4	17060-07-0	81-119	104
4	Toluene-d8	2037-26-5	81-118	105
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	70
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	69
3	Fluorobenzene	462-06-6	50-200	73
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-2	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-S-5**	Sample Matrix	Soil	Moisture %:	3.6
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	16:59
Data File Name:	2367-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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4/14/99

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	89
2	Dibromofluoromethane	1868-53-7	75-124	99
3	1,2-Dichloroethane-d4	17060-07-0	75-129	91
4	Toluene-d8	2037-26-5	80-119	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	103
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
3	Fluorobenzene	462-06-6	50-200	88
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-3	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-W-10.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1978	Prep. No:	–	Anal. Time:	07:18
Data File Name:	2367-03	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U
60	Xylenes (total)	1330-20-7	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	93
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	106
4	Toluene-d8	2037-26-5	81-118	109
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	72
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
3	Fluorobenzene	462-06-6	50-200	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	–	Anal. Time:	17:30
Data File Name:	2367-04	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.5	< 5.5	U
2	Bromobenzene	108-86-1	µg/kg	5.5	< 5.5	U
3	Bromochloromethane	74-97-5	µg/kg	5.5	< 5.5	U
4	Bromodichloromethane	75-27-4	µg/kg	5.5	< 5.5	U
5	Bromoform	75-25-2	µg/kg	5.5	< 5.5	U
6	Bromomethane	74-83-9	µg/kg	5.5	< 5.5	U
7	n-Butylbenzene	104-51-8	µg/kg	5.5	< 5.5	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.5	< 5.5	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.5	< 5.5	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.5	< 5.5	U
11	Chlorobenzene	108-90-7	µg/kg	5.5	< 5.5	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.5	< 5.5	U
13	Chloroethane	75-00-3	µg/kg	5.5	< 5.5	U
14	Chloroform	67-66-3	µg/kg	5.5	< 5.5	U
15	Chloromethane	74-87-3	µg/kg	5.5	< 5.5	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.5	< 5.5	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.5	< 5.5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.5	< 5.5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.5	< 5.5	U
20	Dibromomethane	74-95-3	µg/kg	5.5	< 5.5	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.5	< 5.5	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.5	< 5.5	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.5	< 5.5	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.5	< 5.5	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.5	< 5.5	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.5	< 5.5	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.5	< 5.5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.5	< 5.5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.5	< 5.5	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.5	< 5.5	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.5	< 5.5	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.5	< 5.5	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.5	< 5.5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.5	< 5.5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.5	< 5.5	U
36	Ethylbenzene	100-41-4	µg/kg	5.5	< 5.5	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.5	< 5.5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.5	< 5.5	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.5	< 5.5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.5	< 5.5	U
41	Naphthalene	91-20-3	µg/kg	5.5	< 5.5	U
42	n-Propylbenzene	103-65-1	µg/kg	5.5	< 5.5	U
43	Styrene	100-42-5	µg/kg	5.5	< 5.5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.5	< 5.5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.5	< 5.5	U UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.5	< 5.5	U
47	Toluene	108-88-3	µg/kg	5.5	< 5.5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.5	< 5.5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.5	< 5.5	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.5	< 5.5	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.5	< 5.5	U
52	Trichloroethene	79-01-6	µg/kg	5.5	< 5.5	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.5	< 5.5	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.5	< 5.5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.5	< 5.5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.5	< 5.5	U
57	Vinyl chloride	75-01-4	µg/kg	5.5	< 5.5	U
58	o-Xylene	95-47-6	µg/kg	5.5	< 5.5	U
59	m/p-Xylene	108-38-3	µg/kg	5.5	< 5.5	U
60	Xylenes (total)	1330-20-7	µg/kg	5.5	< 5.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	99
3	1,2-Dichloroethane-d4	17060-07-0	75-129	91
4	Toluene-d8	2037-26-5	80-119	86
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	100
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
3	Fluorobenzene	462-06-6	50-200	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-5	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1978	Prep. No:	–	Anal. Time:	07:51
Data File Name:	2367-05	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	90
2	Dibromofluoromethane	1868-53-7	79-120	101
3	1,2-Dichloroethane-d4	17060-07-0	81-119	109
4	Toluene-d8	2037-26-5	81-118	106
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	78
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	76
3	Fluorobenzene	462-06-6	50-200	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260B	Prep. Date:	03/15/99	Anal. Date:	03/15/99
Batch No:	99G1912	Prep. No:	-	Anal. Time:	18:01
Data File Name:	2367-06	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U UJ
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U
60	Xylenes (total)	1330-20-7	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	98
4	Toluene-d8	2037-26-5	80-119	84
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	86
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	91
3	Fluorobenzene	462-06-6	50-200	69
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260B

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-7	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: C
Anal. Method:	8260B	Prep. Date:	03/18/99	Anal. Date:	03/18/99
Batch No:	99G1978	Prep. No:	-	Anal. Time:	08:23
Data File Name:	2367-07	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	< 5	U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	<5	U
59	m/p-Xylene	108-38-3	µg/L	5	<5	U
60	Xylenes (total)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	84
2	Dibromofluoromethane	1868-53-7	79-120	99
3	1,2-Dichloroethane-d4	17060-07-0	81-119	111
4	Toluene-d8	2037-26-5	81-118	107
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	66
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	67
3	Fluorobenzene	462-06-6	50-200	72
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 14, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI6d-S-5**
99SY-MI6d-W-10.6
99SY-MI8c-S-2
99SY-MI8g-S-5
99SY-MI8g-W-9

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 3 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-SINH-W-9MS/MSD (All water samples in SDG 99-2367)	Pentachlorophenol	8 (15-148)	9 (15-148)	-	J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2367

SDG	Sample	Compound	Flag	A or P	Reason
99-2367	99SY-MI6d-W-10.6 99SY-MI8g-W-9	Pentachlorophenol	J	A	Matrix spike/Matrix spike duplicates (%R)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-2	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-S-5**	Sample Matrix	Soil	Moisture %:	3.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	02:46
Data File Name:	2367-02	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	55
2	2-Fluorophenol	367-12-4	25-103	45
3	Nitrobenzene-d5	4165-60-0	23-119	55
4	Phenol-d5	4165-62-2	24-112	54
5	Terphenyl-d14	1718-51-0	18-136	77
6	2,4,6-Tribromophenol	118-79-6	20-119	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	126
2	Chrysene-d12	1719-03-5	50-200	105
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	109
4	Naphthalene-d8	1146-65-2	50-200	118
5	Perylene-d12	1520-96-3	50-200	136
6	Phenanthrene-d10	1517-22-2	50-200	130
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-3	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-W-10.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/20/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	01:40
Data File Name:	2367-03	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	68
2	2-Fluorophenol	367-12-4	21- 99	52
3	Nitrobenzene-d5	4165-60-0	35-113	71
4	Phenol-d5	4165-62-2	10- 93	36
5	Terphenyl-d14	1718-51-0	33-140	102
6	2,4,6-Tribromophenol	118-79-6	10-122	55
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	79
2	Chrysene-d12	1719-03-5	50-200	64
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	104
4	Naphthalene-d8	1146-65-2	50-200	106
5	Perylene-d12	1520-96-3	50-200	73
6	Phenanthrene-d10	1517-22-2	50-200	79
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

11/1699 16961

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	02:05
Data File Name:	2367-04	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	550	< 550	U
2	Acenaphthylene	208-96-8	µg/kg	550	< 550	U
3	Anthracene	120-12-7	µg/kg	550	< 550	U
4	Benz(a)anthracene	56-55-3	µg/kg	550	< 550	U
5	Benzo(a)pyrene	50-32-8	µg/kg	550	< 550	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	550	< 550	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	550	< 550	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	550	< 550	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	550	< 550	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	550	< 550	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	550	< 550	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	550	< 550	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	550	< 550	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	550	< 550	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	550	< 550	U
18	2-Chlorophenol	95-57-8	µg/kg	550	< 550	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	550	< 550	U
20	Chrysene	218-01-9	µg/kg	550	< 550	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	550	< 550	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	550	< 550	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	550	< 550	U
24	Dibenzofuran	132-64-9	µg/kg	550	< 550	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	550	< 550	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	550	< 550	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	550	< 550	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	550	< 550	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	550	< 550	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	550	< 550	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	550	< 550	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	550	< 550	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	550	< 550	U
37	Fluoranthene	206-44-0	µg/kg	550	< 550	U
38	Fluorene	86-73-7	µg/kg	550	< 550	U
39	Hexachlorobenzene	118-74-1	µg/kg	550	< 550	U
40	Hexachlorobutadiene	87-68-3	µg/kg	550	< 550	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	550	< 550	U
42	Hexachloroethane	67-72-1	µg/kg	550	< 550	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	550	< 550	U
44	Isophorone	78-59-1	µg/kg	550	< 550	U
45	2-Methylnaphthalene	91-57-6	µg/kg	550	< 550	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	550	< 550	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	550	< 550	U
48	Naphthalene	91-20-3	µg/kg	550	< 550	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	550	< 550	U
53	2-Nitrophenol	88-75-5	µg/kg	550	< 550	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	550	< 550	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	550	< 550	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	550	< 550	U
59	Phenol	108-95-2	µg/kg	550	< 550	U
60	Pyrene	129-00-0	µg/kg	550	< 550	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	550	< 550	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	550	< 550	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	550	< 550	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	48
2	2-Fluorophenol	367-12-4	25-103	50
3	Nitrobenzene-d5	4165-60-0	23-119	48
4	Phenol-d5	4165-62-2	24-112	48
5	Terphenyl-d14	1718-51-0	18-136	71
6	2,4,6-Tribromophenol	118-79-6	20-119	49
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	150
2	Chrysene-d12	1719-03-5	50-200	123
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	123
4	Naphthalene-d8	1146-65-2	50-200	137
5	Perylene-d12	1520-96-3	50-200	159
6	Phenanthrene-d10	1517-22-2	50-200	155
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99 16970

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	01:23
Data File Name:	2367-06	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

16973

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	47
2	2-Fluorophenol	367-12-4	25-103	52
3	Nitrobenzene-d5	4165-60-0	23-119	47
4	Phenol-d5	4165-62-2	24-112	47
5	Terphenyl-d14	1718-51-0	18-136	72
6	2,4,6-Tribromophenol	118-79-6	20-119	31
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	146
2	Chrysene-d12	1719-03-5	50-200	123
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	123
4	Naphthalene-d8	1146-65-2	50-200	136
5	Perylene-d12	1520-96-3	50-200	155
6	Phenanthrene-d10	1517-22-2	50-200	152
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

16974

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270C

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-7	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270C	Prep. Date:	03/13/99	Anal. Date:	03/20/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	02:22
Data File Name:	2367-07	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	74
2	2-Fluorophenol	367-12-4	21- 99	51
3	Nitrobenzene-d5	4165-60-0	35-113	76
4	Phenol-d5	4165-62-2	10- 93	37
5	Terphenyl-d14	1718-51-0	33-140	122
6	2,4,6-Tribromophenol	118-79-6	10-122	71
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	120
2	Chrysene-d12	1719-03-5	50-200	97
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	105
4	Naphthalene-d8	1146-65-2	50-200	117
5	Perylene-d12	1520-96-3	50-200	114
6	Phenanthrene-d10	1517-22-2	50-200	124
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

16978

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 19, 1999

Matrix: Wipe

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2366

Sample Identification

99SY-BF1d-P-O
99SY-P17a-P-O**
99SY-P17b-P-O
99SY-P17c-P-O
99SY-P17d-P-O
99SY-P17e-P-O

**Indicates sample underwent NFESC Level D review.

Introduction

This data review covers 6 wipe samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample 99SY-BF1d-P-O was identified as a field blank. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 99SY-P17a-P-O** and 99SY-P17e-P-O were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2366

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2366

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2366

No Sample Data Qualified in this SDG

A

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-1	Received Date:	03/09/1999
Sample ID:	**99SY-BF1D-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	17:47
Data File Name:	2366.101	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	<0.75	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	110
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

w/1999

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-2	Received Date:	03/09/1999
Sample ID:	**99SY-P17A-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	18:12
Data File Name:	2366.102	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	3.7	
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	96
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	108
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/1999

16112

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-3	Received Date:	03/09/1999
Sample ID:	**99SY-P17B-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	18:36
Data File Name:	2366.103	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	2.2	
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	82
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	98
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

16116

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-4	Received Date:	03/09/1999
Sample ID:	**99SY-P17C-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/17/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	16:28
Data File Name:	2366.304	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	<1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	<3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	<1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	<1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	<1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	2.3	
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	<0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	86
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	94
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

16121

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-5	Received Date:	03/09/1999
Sample ID:	**99SY-P17D-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	19:50
Data File Name:	2366.105	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	< 1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	< 3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	< 1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	< 1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	< 1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	1.6	
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	< 0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	85
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	100
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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16124

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992366	Collected by:	BB/DB
		Lab Sample ID:	99-2366-6	Received Date:	03/09/1999
Sample ID:	**99SY-P17E-P-O**	Sample Matrix	Soil	Moisture %:	
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/16/99
Batch No:	99G1913	Prep. No:	1 of 1	Anal. Time:	20:15
Data File Name:	2366.106	Sample Amount:	1 wp	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/wipe	1.5	< 1.5	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/wipe	3	< 3	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/wipe	1.5	< 1.5	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/wipe	1.5	< 1.5	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/wipe	1.5	< 1.5	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/wipe	0.75	4.3	
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/wipe	0.75	< 0.75	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	76
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	115
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/25/1999

16128

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI8c-S-2
99SY-MI8g-S-5
99SY-MI8g-W-9

Introduction

This data review covers 2 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2367	All TCL compounds	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Data Qualification Summary - SDG 99-2367

SDG	Sample	Compound	Flag	A or P	Reason
99-2367	99SY-MI8g-W-9	All TCL compounds	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1897	Prep. No:	1 of 1	Anal. Time:	18:19
Data File Name:	2367.004	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	55	<55	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	55	<55	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	55	<55	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	55	<55	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	28	<28	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	28	87	

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	73
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	84
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

17167

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1897	Prep. No:	1 of 1	Anal. Time:	18:43
Data File Name:	2367.006	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	52	<52	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	100	<100	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	52	<52	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	52	<52	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	52	<52	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	26	<26	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	26	<26	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	31-140	77
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	37-139	85
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

17171

Applied P & Ch Laboratory

Organic Analysis Results for Method 8082

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-7	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-W-9**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: R
Anal. Method:	8082	Prep. Date:	03/12/99	Anal. Date:	03/17/99
Batch No:	99G1916	Prep. No:	1 of 1	Anal. Time:	00:19
Data File Name:	2367.107	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	2	<2	U
2	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	5	<5	U
3	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	2	<2	U
4	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	2	<2	U
5	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	2	<2	U
6	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1	<1	U
7	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1	<1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Decachlorobiphenyl (DCB)	2051-24-3	30-132	69
2	2,4,5,6-Tetrachloro-m-xylene	877-09-8	33-114	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

17174

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI8c-S-2
99SY-MI8c-W-12
99SY-MI8g-S-5
99SY-MI8g-W-9

Introduction

This data review covers 2 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
99G1898-MB-01	3/11/99	TPH as gasoline	0.03 mg/L	All water samples in SDG 99-2367

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-MI8g-W-9	TPH as gasoline	0.04 mg/L	0.05U mg/L

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2367

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2367	99SY-MI8g-W-9	TPH as gasoline	0.05U mg/L	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1893	Prep. No:	-	Anal. Time:	12:41
Data File Name:	2367.004	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1/99

17402

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-5	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1898	Prep. No:	-	Anal. Time:	17:10
Data File Name:	2367.005	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	<0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/99

17404

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1893	Prep. No:	–	Anal. Time:	13:03
Data File Name:	2367.006	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	< 1.0	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/16/99

17406

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-7	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1898	Prep. No:	–	Anal. Time:	19:16
Data File Name:	2367.007	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.04	J 0.054

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	96
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/6/99

17408

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 19, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI6d-S-5
99SY-MI6d-W-10.6
99SY-MI8c-S-2
99SY-MI8g-S-5
99SY-MI8g-W-9

Introduction

This data review covers 3 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2367	TPH as extractables	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2367

SDG	Sample	Compound	Flag	A or P	Reason
99-2367	99SY-MI6d-W-10.6 99SY-MI8g-W-9	TPH as extractables	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

B

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-2	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-S-5**	Sample Matrix	Soil	Moisture %:	3.6
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	07:53
Data File Name:	2367.002	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	136
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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17491

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-3	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-W-10.6**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/14/99
Batch No:	99G1904	Prep. No:	1 of 1	Anal. Time:	18:30
Data File Name:	2367.003	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.09	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	129
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/1999

17493

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	08:18
Data File Name:	2367.004	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	6	J
2	Motor oil		mg/kg	11	27	

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	142
# of out-of-control				0

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

17495

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	08:43
Data File Name:	2367.006	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	<10	U
2	Motor oil		mg/kg	10	<10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	140
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M 1999

17497

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-7	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-W-9**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/14/99
Batch No:	99G1904	Prep. No:	1 of 1	Anal. Time:	18:55
Data File Name:	2367.007	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.05	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	121
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

M4999

17499

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI6d-S-5**
99SY-MI6d-W-10.6
99SY-MI8c-S-2
99SY-MI8c-W-12
99SY-MI8g-S-5
99SY-MI8g-W-9

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 3 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

I. Technical Holding Times

All technical holding time requirements were met.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Copper	0.048 mg/Kg	All soil samples in SDG 99-2367
ICB/CCB	Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Mercury Nickel Selenium Silver Vanadium Zinc Molybdenum	1.7 ug/L 2.8 ug/L 0.3 ug/L 0.4 ug/L 1.5 ug/L 1.5 ug/L 2.2 ug/L 0.1 ug/L 1.9 ug/L 2.3 ug/L 0.6 ug/L 0.9 ug/L 2.4 ug/L 1.2 ug/L	All soil samples in SDG 99-2367
PB (prep blank)	Nickel Thallium	0.57 ug/L 1.7 ug/L	All water samples in SDG 99-2367
ICB/CCB	Arsenic Cadmium Copper Nickel Selenium Thallium	1.9 ug/L 0.3 ug/L 1.4 ug/L 0.4 ug/L 4.3 ug/L 3.0 ug/L	All water samples in SDG 99-2367

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X

blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-MI6d-S-5**	Cadmium Mercury	0.017 mg/Kg 0.033 mg/Kg	0.017U mg/Kg 0.033U mg/Kg
99SY-MI8c-S-2	Molybdenum	0.17 mg/Kg	0.17U mg/Kg
99SY-MI8g-S-5	Cadmium Selenium Molybdenum	0.027 mg/Kg 0.25 mg/Kg 0.11 mg/Kg	0.027U mg/Kg 0.25U mg/Kg 0.11U mg/Kg
99SY-MI6d-W-10.6	Arsenic Copper Selenium	6.4 ug/L 1.9 ug/L 5.3 ug/L	6.4U ug/L 1.9U ug/L 5.3U ug/L
99SY-MI8c-W-12	Arsenic Cadmium Copper	2.6 ug/L 0.38 ug/L 6.6 ug/L	2.6U ug/L 0.38U ug/L 6.6U ug/L
99SY-MI8g-W-9	Arsenic Copper Nickel	3.7 ug/L 2.0 ug/L 2.8 ug/L	3.7U ug/L 2.0U ug/L 2.8U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2367	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-US4h-S-3MS/MSD (All soil samples in SDG 99-2367)	Cadmium Lead Selenium	158 (75-125) 209 (75-125) 128 (75-125)	156 (75-125) 210 (75-125) -	- - -	J (all detects) J (all detects) J (all detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2367	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2367

SDG	Sample	Analyte	Flag	A or P	Reason
99-2367	99SY-MI6d-W-10.6 99SY-MI8c-W-12 99SY-MI8g-W-9	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	None	P	Matrix spike/Matrix spike duplicates
99-2367	99SY-MI6d-S-5** 99SY-MI8c-S-2 99SY-MI8g-S-5	Cadmium Lead Selenium	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
99-2367	99SY-MI6d-W-10.6 99SY-MI8c-W-12 99SY-MI8g-W-9	Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	None	P	Duplicate sample analysis

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2367

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2367	99SY-MI6d-S-5**	Cadmium Mercury	0.017U mg/Kg 0.033U mg/Kg	A
99-2367	99SY-MI8c-S-2	Molybdenum	0.17U mg/Kg	A

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2367	99SY-MI8g-S-5	Cadmium Selenium Molybdenum	0.027U mg/Kg 0.25U mg/Kg 0.11U mg/Kg	A
99-2367	99SY-MI6d-W-10.6	Arsenic Copper Selenium	6.4U ug/L 1.9U ug/L 5.3U ug/L	A
99-2367	99SY-MI8c-W-12	Arsenic Cadmium Copper	2.6U ug/L 0.38U ug/L 6.6U ug/L	A
99-2367	99SY-MI8g-W-9	Arsenic Copper Nickel	3.7U ug/L 2.0U ug/L 2.8U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-2	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-S-5**	Sample Matrix	Soil	Moisture %:	3.6
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	0.36	B	P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	2.0		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	61.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0044	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.017	B	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	13.0		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	7.1		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	8.1		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	1.4		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	0.033	B	CV	U	99M1433N	03/11/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	< 0.025	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	10.0		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	0.66		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	< 0.017	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	< 0.073	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	25.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	36.6		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL; B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control; * - Duplicate analysis out of control; W - Post digestion spike for GFAA out of control; E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-3	Received Date:	03/09/1999
Sample ID:	**99SY-MI6D-W-10.6**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	12.3		P		99M1449L	03/15/99	03/15/99	1	6010C
Arsenic	7440-38-2	µg/L	5	6.4		P	U	99M1449L	03/15/99	03/15/99	1	6010C
Barium	7440-39-3	µg/L	10	144		P		99M1449L	03/15/99	03/15/99	1	6010C
Beryllium	7440-41-7	µg/L	2	< 0.11	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Cadmium	7440-43-9	µg/L	2	< 0.17	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Chromium	7440-47-3	µg/L	5	5.3		P		99M1449L	03/15/99	03/15/99	1	6010C
Cobalt	7440-48-4	µg/L	5	< 0.29	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Copper	7440-50-8	µg/L	10	1.9	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Lead	7439-92-1	µg/L	5	4.3	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	< 0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	15.9		P		99M1449L	03/15/99	03/15/99	1	6010C
Nickel	7440-02-0	µg/L	5	4.8	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Selenium	7782-49-2	µg/L	10	5.3	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Silver	7440-22-4	µg/L	10	1.5	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.6	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Vanadium	7440-62-2	µg/L	10	< 0.55	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Zinc	7440-66-6	µg/L	5	7.5		P		99M1449L	03/15/99	03/15/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

4/16/99

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-4	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-S-2**	Sample Matrix	Soil	Moisture %:	9.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.5	0.54	B	P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.33	2.3		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.1	61.6		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.22	< 0.0046	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.22	0.17	~~B~~	P	J	99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.55	22.1		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.55	3.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.55	44.5		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.33	29.7		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.22	0.15	B	CV		99M1433N	03/11/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.22	0.17	~~B~~	P	U	99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.33	5.8		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.55	0.68		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.55	< 0.018	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.5	< 0.077	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.55	20.5		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.55	23.1		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date: A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

4

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-5	Received Date:	03/09/1999
Sample ID:	**99SY-MI8C-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	9.0	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Arsenic	7440-38-2	µg/L	5	2.6	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Barium	7440-39-3	µg/L	10	190		P		99M1449L	03/15/99	03/15/99	1	6010C
Beryllium	7440-41-7	µg/L	2	< 0.11	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Cadmium	7440-43-9	µg/L	2	0.38	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Chromium	7440-47-3	µg/L	5	7.3		P		99M1449L	03/15/99	03/15/99	1	6010C
Cobalt	7440-48-4	µg/L	5	2.8	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Copper	7440-50-8	µg/L	10	6.6	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Lead	7439-92-1	µg/L	5	3.4	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Molybdenum	7439-98-7	µg/L	5	236		P		99M1449L	03/15/99	03/15/99	1	6010C
Nickel	7440-02-0	µg/L	5	26.5		P		99M1449L	03/15/99	03/15/99	1	6010C
Selenium	7782-49-2	µg/L	10	< 2.9	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Silver	7440-22-4	µg/L	10	1.1	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.6	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Vanadium	7440-62-2	µg/L	10	< 0.55	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Zinc	7440-66-6	µg/L	5	76.9		P		99M1449L	03/15/99	03/15/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

wll699

17578

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/09/1999
Project ID:	LBNSY AOCs	Service ID:	992367	Collected by:	BB/DB
		Lab Sample ID:	99-2367-6	Received Date:	03/09/1999
Sample ID:	**99SY-MI8G-S-5**	Sample Matrix	Soil	Moisture %:	3.2
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	< 0.062	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Arsenic	7440-38-2	mg/kg	0.31	1.9		P		99M1429M	03/11/99	03/11/99	1	6010C
Barium	7440-39-3	mg/kg	1.0	15.8		P		99M1429M	03/11/99	03/11/99	1	6010C
Beryllium	7440-41-7	mg/kg	0.21	< 0.0043	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Cadmium	7440-43-9	mg/kg	0.21	0.027	B	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Chromium	7440-47-3	mg/kg	0.52	7.0		P		99M1429M	03/11/99	03/11/99	1	6010C
Cobalt	7440-48-4	mg/kg	0.52	2.1		P		99M1429M	03/11/99	03/11/99	1	6010C
Copper	7440-50-8	mg/kg	0.52	2.6		P		99M1429M	03/11/99	03/11/99	1	6010C
Lead	7439-92-1	mg/kg	0.31	2.3		P	J	99M1429M	03/11/99	03/11/99	1	6010C
Mercury	7439-97-6	mg/kg	0.21	< 0.051	U	CV		99M1433N	03/11/99	03/12/99	1	7470A
Molybdenum	7439-98-7	mg/kg	0.21	0.11	B	P	U	99M1429M	03/11/99	03/11/99	1	6010C
Nickel	7440-02-0	mg/kg	0.31	4.3		P		99M1429M	03/11/99	03/11/99	1	6010C
Selenium	7782-49-2	mg/kg	0.52	0.25	B	P	UJ	99M1429M	03/11/99	03/11/99	1	6010C
Silver	7440-22-4	mg/kg	0.52	< 0.017	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Thallium	7440-28-0	mg/kg	5.2	< 0.072	U	P		99M1429M	03/11/99	03/11/99	1	6010C
Vanadium	7440-62-2	mg/kg	0.52	8.4		P		99M1429M	03/11/99	03/11/99	1	6010C
Zinc	7440-66-6	mg/kg	0.52	15.7		P		99M1429M	03/11/99	03/11/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL). but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

6

Client Name: CDM Federal Programs Corp.
Project ID: LBNSY AOCs

Project No: 6210-014
Service ID: 992367
Lab Sample ID: 99-2367-7
Sample Matrix Water

Collection Date: 03/09/1999
Collected by: BB/DB
Received Date: 03/09/1999
Moisture %: -

Sample ID: **99SY-MI8G-W-9**
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	9.5	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Arsenic	7440-38-2	µg/L	5	3.7	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Barium	7440-39-3	µg/L	10	153		P		99M1449L	03/15/99	03/15/99	1	6010C
Beryllium	7440-41-7	µg/L	2	< 0.11	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Cadmium	7440-43-9	µg/L	2	< 0.17	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Chromium	7440-47-3	µg/L	5	7.5		P		99M1449L	03/15/99	03/15/99	1	6010C
Cobalt	7440-48-4	µg/L	5	< 0.29	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Copper	7440-50-8	µg/L	10	2.0	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Lead	7439-92-1	µg/L	5	3.7	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Mercury	7439-97-6	µg/L	0.5	< 0.097	U	CV		99M1434N	03/11/99	03/11/99	1	7470A
Molybdenum	7439-98-7	µg/L	5	7.7		P		99M1449L	03/15/99	03/15/99	1	6010C
Nickel	7440-02-0	µg/L	5	2.8	~~B~~	P	U	99M1449L	03/15/99	03/15/99	1	6010C
Selenium	7782-49-2	µg/L	10	< 2.9	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Silver	7440-22-4	µg/L	10	1.3	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Thallium	7440-28-0	µg/L	10	< 1.6	U	P		99M1449L	03/15/99	03/15/99	1	6010C
Vanadium	7440-62-2	µg/L	10	0.60	B	P		99M1449L	03/15/99	03/15/99	1	6010C
Zinc	7440-66-6	µg/L	5	5.6		P		99M1449L	03/15/99	03/15/99	1	6010C

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor
C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.
Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control
W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control
M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 9, 1999

LDC Report Date: April 14, 1999

Matrix: Soil/Water

Parameters: Wet Chemistry

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2367

Sample Identification

99SY-MI6d-S-5
99SY-MI8c-S-2
99SY-MI8g-S-5
99SY-MI8g-W-9*
99SY-MI8c-S-2DUP

*Indicates sample underwent NFESC Level D review for Cyanide

Introduction

This data review covers 4 soil samples and one water sample listed on the cover sheet. The analyses were per EPA SW 846 Method 9010A for Cyanide and EPA SW 846 Method 9045B for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
99SY-MI8c-S-2 99SY-MI8g-S-5 99SY-MI8g-W-9*	Cyanide	No MS associated with these samples.	MS required.	None	P

Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2367	Cyanide	No DUP analysis associated with these samples.	DUP analysis required.	None	P
All soil samples in SDG 99-2367	pH	No DUP analysis associated with these samples.	DUP analysis required.	None	P

Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Sample Result Verification

All sample result verifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Wet Chemistry - Data Qualification Summary - SDG 99-2367

SDG	Sample	Analyte	Flag	A or P	Reason
99-2367	99SY-MI8c-S-2 99SY-MI8g-S-5 99SY-MI8g-W-9*	Cyanide	None	P	Matrix spike/Matrix spike duplicates
99-2367	99SY-MI8g-W-9*	Cyanide	None	P	Duplicate sample analysis
99-2367	99SY-MI6d-S-5 99SY-MI8c-S-2 99SY-MI8g-S-5	pH	None	P	Duplicate sample analysis

Long Beach Naval Shipyard
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Wet Chemistry - Field Blank Data Qualification Summary - SDG 99-2367

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9045

Client Name: CDM Federal Programs Corp. Project No: 6210-014 Anal. Method 9045
Project ID: LBNSY AOCs Service ID: 992367 Collected by: BB/DB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2367-2	99SY-MI6D-S-5 1	Soil	03/09/99	03/09/99	03/12/99	99W2466	pH unit	0.01	8.07	
99-2367-4	99SY-MI8C-S-2 2	Soil	03/09/99	03/09/99	03/12/99	99W2466	pH unit	0.01	8.05	
99-2367-6	99SY-MI8G-S-5 3	Soil	03/09/99	03/09/99	03/12/99	99W2466	pH unit	0.01	8.80	
99W2466-MB-01		Soil	03/12/99	03/12/99	03/12/99	99W2466	pH unit	0.01	<0.01	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

4/16/99

17944

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code LBNSY AOCs | Job #6210-014 P.O. #

Project Address Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad, B. Boyd

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOCs 8260B	SVOCs 8270C	Metals 6010C	TPH-ext. 8015	PCBs 8082	Cyanide 9010A	TPH-PAT 8015	Remarks
	995Y-BT1v-W-8	3/9/99	0735	Water	HCl	2	X							
	995Y-MI6d-S-5	3/9/99	0800	soil	4°C	2	X	X	X	X				
	995Y-MI6d-W-10.6	3/9/99	0815	Water	HNO3/4°	5	X	X	X	X				
	995Y-P17d-P-0		0815	wipe	4°C	1					X			
	995Y-BF1d-P-0		0810	wipe	4°C	1					X			
	995Y-P17c-P-0		0820	wipe	4°C	1					X			
	995Y-P17b-P-0		0825	wipe	4°C	1					X			
	995Y-P17a-P-0		0830	wipe	4°C	1					X			
	995Y-P17e-P-0		0835	wipe	4°C	1					X			
	995Y-MI8g-S-5		0945	soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8g-W-9		1005	water	yes	9	X	X	X	X	X	X	X	
	995Y-MI8c-S-2		1300	Soil	4°C	2	X	X	X	X	X	X	X	
	995Y-MI8c-W-12		1400	water	HCl/HNO3	2	X		X				X	Only able to collect 1 1/2 VOA vials only 30-40 ml for metals. Analyze if possible.
BBoyd														

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D) [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by B Boyd Date/Time 3/9/99 / 1535 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 16, 1999

Matrix: Soil/Water

Parameters: Volatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5d-W-11.8**
99SY-AD5e-S-9
99SY-AD5e-W-12
99SY-BT1w-11
99SY-US4f-S-1
99SY-AD5d-S-9MS
99SY-AD5d-S-9MSD
99SY-AD5d-W-11.8MS
99SY-AD5d-W-11.8MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 6 soil samples and 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
3/20/99	Bromomethane	30.9	All water samples in SDG 99-2392	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 99SY-BT1w-11 was identified as a trip blank. No volatile contaminants were

found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
99SY-BT1w-11	3/10/99	Chloroform	8 ug/L	99SY-AD5b-S-1 99SY-AD5d-S-9 99SY-AD5d-W-11.8** 99SY-AD5e-S-9 99SY-AD5e-W-12 99SY-US4f-S-1

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-AD5d-W-11.8**	Chloroform	2 ug/L	5U ug/L
99SY-AD5e-W-12	Chloroform	2 ug/L	5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Volatiles - Data Qualification Summary - SDG 99-2392

SDG	Sample	Compound	Flag	A or P	Reason
99-2392	99SY-AD5d-W-11.8** 99SY-AD5e-W-12 99SY-BT1w-11	Bromomethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Long Beach Naval Shipyard
Volatiles - Laboratory Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Volatiles - Field Blank Data Qualification Summary - SDG 99-2392

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2392	99SY-AD5d-W-11.8**	Chloroform	5U ug/L	A
99-2392	99SY-AD5e-W-12	Chloroform	5U ug/L	A

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-1	Received Date:	03/10/1999
Sample ID:	**99SY-AD5B-S-1**	Sample Matrix	Soil	Moisture %:	4.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/16/99	Anal. Date:	03/16/99
Batch No:	99G1942	Prep. No:	-	Anal. Time:	12:28
Data File Name:	2392-01	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.2	< 5.2	U
2	Bromobenzene	108-86-1	µg/kg	5.2	< 5.2	U
3	Bromochloromethane	74-97-5	µg/kg	5.2	< 5.2	U
4	Bromodichloromethane	75-27-4	µg/kg	5.2	< 5.2	U
5	Bromoform	75-25-2	µg/kg	5.2	< 5.2	U
6	Bromomethane	74-83-9	µg/kg	5.2	< 5.2	U
7	n-Butylbenzene	104-51-8	µg/kg	5.2	< 5.2	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.2	< 5.2	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.2	< 5.2	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.2	< 5.2	U
11	Chlorobenzene	108-90-7	µg/kg	5.2	< 5.2	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.2	< 5.2	U
13	Chloroethane	75-00-3	µg/kg	5.2	< 5.2	U
14	Chloroform	67-66-3	µg/kg	5.2	< 5.2	U
15	Chloromethane	74-87-3	µg/kg	5.2	< 5.2	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.2	< 5.2	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.2	< 5.2	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.2	< 5.2	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.2	< 5.2	U
20	Dibromomethane	74-95-3	µg/kg	5.2	< 5.2	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.2	< 5.2	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.2	< 5.2	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.2	< 5.2	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.2	< 5.2	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.2	< 5.2	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.2	< 5.2	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.2	< 5.2	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.2	< 5.2	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.2	< 5.2	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.2	< 5.2	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.2	< 5.2	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.2	< 5.2	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.2	< 5.2	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.2	< 5.2	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.2	< 5.2	U
36	Ethylbenzene	100-41-4	µg/kg	5.2	< 5.2	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.2	< 5.2	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.2	< 5.2	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.2	< 5.2	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.2	< 5.2	U
41	Naphthalene	91-20-3	µg/kg	5.2	< 5.2	U
42	n-Propylbenzene	103-65-1	µg/kg	5.2	< 5.2	U
43	Styrene	100-42-5	µg/kg	5.2	< 5.2	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.2	< 5.2	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.2	< 5.2	U
46	Tetrachloroethene	127-18-4	µg/kg	5.2	< 5.2	U
47	Toluene	108-88-3	µg/kg	5.2	< 5.2	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.2	< 5.2	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.2	< 5.2	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.2	< 5.2	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.2	< 5.2	U
52	Trichloroethene	79-01-6	µg/kg	5.2	< 5.2	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.2	< 5.2	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.2	< 5.2	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.2	< 5.2	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.2	< 5.2	U
57	Vinyl chloride	75-01-4	µg/kg	5.2	< 5.2	U
58	o-Xylene	95-47-6	µg/kg	5.2	< 5.2	U
59	m/p-Xylene	108-38-3	µg/kg	5.2	< 5.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	91
2	Dibromofluoromethane	1868-53-7	75-124	94
3	1,2-Dichloroethane-d4	17060-07-0	75-129	80
4	Toluene-d8	2037-26-5	80-119	86
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	112
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	117
3	Fluorobenzene	462-06-6	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

18314

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-2	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-S-9**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/16/99	Anal. Date:	03/16/99
Batch No:	99G1942	Prep. No:	-	Anal. Time:	12:59
Data File Name:	2392-02	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.6	< 5.6	U
2	Bromobenzene	108-86-1	µg/kg	5.6	< 5.6	U
3	Bromochloromethane	74-97-5	µg/kg	5.6	< 5.6	U
4	Bromodichloromethane	75-27-4	µg/kg	5.6	< 5.6	U
5	Bromoform	75-25-2	µg/kg	5.6	< 5.6	U
6	Bromomethane	74-83-9	µg/kg	5.6	< 5.6	U
7	n-Butylbenzene	104-51-8	µg/kg	5.6	< 5.6	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.6	< 5.6	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.6	< 5.6	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.6	< 5.6	U
11	Chlorobenzene	108-90-7	µg/kg	5.6	< 5.6	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.6	< 5.6	U
13	Chloroethane	75-00-3	µg/kg	5.6	< 5.6	U
14	Chloroform	67-66-3	µg/kg	5.6	< 5.6	U
15	Chloromethane	74-87-3	µg/kg	5.6	< 5.6	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.6	< 5.6	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.6	< 5.6	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.6	< 5.6	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.6	< 5.6	U
20	Dibromomethane	74-95-3	µg/kg	5.6	< 5.6	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.6	< 5.6	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.6	< 5.6	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.6	< 5.6	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.6	< 5.6	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.6	< 5.6	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.6	< 5.6	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.6	< 5.6	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.6	< 5.6	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.6	< 5.6	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.6	< 5.6	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.6	< 5.6	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.6	< 5.6	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.6	< 5.6	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.6	< 5.6	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.6	< 5.6	U
36	Ethylbenzene	100-41-4	µg/kg	5.6	< 5.6	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.6	< 5.6	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.6	< 5.6	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.6	< 5.6	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.6	< 5.6	U
41	Naphthalene	91-20-3	µg/kg	5.6	< 5.6	U
42	n-Propylbenzene	103-65-1	µg/kg	5.6	< 5.6	U
43	Styrene	100-42-5	µg/kg	5.6	< 5.6	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.6	< 5.6	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.6	< 5.6	U
46	Tetrachloroethene	127-18-4	µg/kg	5.6	< 5.6	U
47	Toluene	108-88-3	µg/kg	5.6	< 5.6	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.6	< 5.6	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.6	< 5.6	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.6	< 5.6	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.6	< 5.6	U
52	Trichloroethene	79-01-6	µg/kg	5.6	< 5.6	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.6	< 5.6	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.6	< 5.6	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.6	< 5.6	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.6	< 5.6	U
57	Vinyl chloride	75-01-4	µg/kg	5.6	< 5.6	U
58	o-Xylene	95-47-6	µg/kg	5.6	< 5.6	U
59	m/p-Xylene	108-38-3	µg/kg	5.6	< 5.6	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	98
3	1,2-Dichloroethane-d4	17060-07-0	75-129	84
4	Toluene-d8	2037-26-5	80-119	83
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	108
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	114
3	Fluorobenzene	462-06-6	50-200	87
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

18318

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-3	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-W-11.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/20/99	Anal. Date:	03/20/99
Batch No:	99G2009	Prep. No:	-	Anal. Time:	06:18
Data File Name:	2392-03	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	J SU
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	2	J
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

18321

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	4	J
59	m/p-Xylene	108-38-3	µg/L	5	8	

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	104
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	106
4	Toluene-d8	2037-26-5	81-118	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	132
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	142
3	Fluorobenzene	462-06-6	50-200	103
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

"**" All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

18322

Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-4	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-S-9**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/16/99	Anal. Date:	03/16/99
Batch No:	99G1942	Prep. No:	-	Anal. Time:	13:30
Data File Name:	2392-04	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	5.9	< 5.9	U
2	Bromobenzene	108-86-1	µg/kg	5.9	< 5.9	U
3	Bromochloromethane	74-97-5	µg/kg	5.9	< 5.9	U
4	Bromodichloromethane	75-27-4	µg/kg	5.9	< 5.9	U
5	Bromoform	75-25-2	µg/kg	5.9	< 5.9	U
6	Bromomethane	74-83-9	µg/kg	5.9	< 5.9	U
7	n-Butylbenzene	104-51-8	µg/kg	5.9	< 5.9	U
8	sec-Butylbenzene	135-98-8	µg/kg	5.9	< 5.9	U
9	tert-Butylbenzene	98-06-6	µg/kg	5.9	< 5.9	U
10	Carbon tetrachloride	56-23-5	µg/kg	5.9	< 5.9	U
11	Chlorobenzene	108-90-7	µg/kg	5.9	< 5.9	U
12	Chlorodibromomethane	124-48-1	µg/kg	5.9	< 5.9	U
13	Chloroethane	75-00-3	µg/kg	5.9	< 5.9	U
14	Chloroform	67-66-3	µg/kg	5.9	< 5.9	U
15	Chloromethane	74-87-3	µg/kg	5.9	< 5.9	U
16	2-Chlorotoluene	95-49-8	µg/kg	5.9	< 5.9	U
17	4-Chlorotoluene	106-43-4	µg/kg	5.9	< 5.9	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	5.9	< 5.9	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	5.9	< 5.9	U
20	Dibromomethane	74-95-3	µg/kg	5.9	< 5.9	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	5.9	< 5.9	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	5.9	< 5.9	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	5.9	< 5.9	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	5.9	< 5.9	U
25	1,1-Dichloroethane	75-34-3	µg/kg	5.9	< 5.9	U
26	1,2-Dichloroethane	107-06-2	µg/kg	5.9	< 5.9	U
27	1,1-Dichloroethene	75-35-4	µg/kg	5.9	< 5.9	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	5.9	< 5.9	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	5.9	< 5.9	U
30	1,2-Dichloropropane	78-87-5	µg/kg	5.9	< 5.9	U
31	1,3-Dichloropropane	142-28-9	µg/kg	5.9	< 5.9	U
32	2,2-Dichloropropane	594-20-7	µg/kg	5.9	< 5.9	U
33	1,1-Dichloropropene	563-58-6	µg/kg	5.9	< 5.9	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	5.9	< 5.9	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	5.9	< 5.9	U
36	Ethylbenzene	100-41-4	µg/kg	5.9	< 5.9	U
37	Hexachlorobutadiene	87-68-3	µg/kg	5.9	< 5.9	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	5.9	< 5.9	U
39	p-Isopropyltoluene	99-87-6	µg/kg	5.9	< 5.9	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	5.9	< 5.9	U
41	Naphthalene	91-20-3	µg/kg	5.9	< 5.9	U
42	n-Propylbenzene	103-65-1	µg/kg	5.9	< 5.9	U
43	Styrene	100-42-5	µg/kg	5.9	< 5.9	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	5.9	< 5.9	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	5.9	< 5.9	U
46	Tetrachloroethene	127-18-4	µg/kg	5.9	< 5.9	U
47	Toluene	108-88-3	µg/kg	5.9	< 5.9	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	5.9	< 5.9	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	5.9	< 5.9	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	5.9	< 5.9	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	5.9	< 5.9	U
52	Trichloroethene	79-01-6	µg/kg	5.9	< 5.9	U
53	Trichlorofluoromethane	75-69-4	µg/kg	5.9	< 5.9	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	5.9	< 5.9	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	5.9	< 5.9	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	5.9	< 5.9	U
57	Vinyl chloride	75-01-4	µg/kg	5.9	< 5.9	U
58	o-Xylene	95-47-6	µg/kg	5.9	< 5.9	U
59	m/p-Xylene	108-38-3	µg/kg	5.9	< 5.9	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	87
2	Dibromofluoromethane	1868-53-7	75-124	101
3	1,2-Dichloroethane-d4	17060-07-0	75-129	89
4	Toluene-d8	2037-26-5	80-119	83
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	105
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	111
3	Fluorobenzene	462-06-6	50-200	82
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-5	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/20/99	Anal. Date:	03/20/99
Batch No:	99G2009	Prep. No:	-	Anal. Time:	06:48
Data File Name:	2392-05	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	2	J 5U
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	<5	U
41	Naphthalene	91-20-3	µg/L	5	<5	U
42	n-Propylbenzene	103-65-1	µg/L	5	<5	U
43	Styrene	100-42-5	µg/L	5	<5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	<5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	<5	U
46	Tetrachloroethene	127-18-4	µg/L	5	<5	U
47	Toluene	108-88-3	µg/L	5	<5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	<5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	<5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	<5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	<5	U
52	Trichloroethene	79-01-6	µg/L	5	<5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	<5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	<5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	<5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	<5	U
57	Vinyl chloride	75-01-4	µg/L	5	<5	U
58	o-Xylene	95-47-6	µg/L	5	0.4	J
59	m/p-Xylene	108-38-3	µg/L	5	0.8	J

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	100
2	Dibromofluoromethane	1868-53-7	79-120	105
3	1,2-Dichloroethane-d4	17060-07-0	81-119	113
4	Toluene-d8	2037-26-5	81-118	87
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	137
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	155
3	Fluorobenzene	462-06-6	50-200	105
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
"All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-6	Received Date:	03/10/1999
Sample ID:	**99SY-BT1W-11**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/20/99	Anal. Date:	03/20/99
Batch No:	99G2009	Prep. No:	-	Anal. Time:	07:19
Data File Name:	2392-06	Sample Amount:	5 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/L	5	< 5	U
2	Bromobenzene	108-86-1	µg/L	5	< 5	U
3	Bromochloromethane	74-97-5	µg/L	5	< 5	U
4	Bromodichloromethane	75-27-4	µg/L	5	< 5	U
5	Bromoform	75-25-2	µg/L	5	< 5	U
6	Bromomethane	74-83-9	µg/L	5	< 5	U UJ
7	n-Butylbenzene	104-51-8	µg/L	5	< 5	U
8	sec-Butylbenzene	135-98-8	µg/L	5	< 5	U
9	tert-Butylbenzene	98-06-6	µg/L	5	< 5	U
10	Carbon tetrachloride	56-23-5	µg/L	5	< 5	U
11	Chlorobenzene	108-90-7	µg/L	5	< 5	U
12	Chlorodibromomethane	124-48-1	µg/L	5	< 5	U
13	Chloroethane	75-00-3	µg/L	5	< 5	U
14	Chloroform	67-66-3	µg/L	5	8	
15	Chloromethane	74-87-3	µg/L	5	< 5	U
16	2-Chlorotoluene	95-49-8	µg/L	5	< 5	U
17	4-Chlorotoluene	106-43-4	µg/L	5	< 5	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/L	5	< 5	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/L	5	< 5	U
20	Dibromomethane	74-95-3	µg/L	5	< 5	U
21	1,2-Dichlorobenzene	95-50-1	µg/L	5	< 5	U
22	1,3-Dichlorobenzene	541-73-1	µg/L	5	< 5	U
23	1,4-Dichlorobenzene	106-46-7	µg/L	5	< 5	U
24	Dichlorodifluoromethane	75-71-8	µg/L	5	< 5	U
25	1,1-Dichloroethane	75-34-3	µg/L	5	< 5	U
26	1,2-Dichloroethane	107-06-2	µg/L	5	< 5	U
27	1,1-Dichloroethene	75-35-4	µg/L	5	< 5	U
28	cis-1,2-Dichloroethene	156-59-2	µg/L	5	< 5	U
29	trans-1,2-Dichloroethene	156-60-5	µg/L	5	< 5	U
30	1,2-Dichloropropane	78-87-5	µg/L	5	< 5	U
31	1,3-Dichloropropane	142-28-9	µg/L	5	< 5	U
32	2,2-Dichloropropane	594-20-7	µg/L	5	< 5	U
33	1,1-Dichloropropene	563-58-6	µg/L	5	< 5	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/L	5	< 5	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/L	5	< 5	U
36	Ethylbenzene	100-41-4	µg/L	5	< 5	U
37	Hexachlorobutadiene	87-68-3	µg/L	5	< 5	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/L	5	< 5	U
39	p-Isopropyltoluene	99-87-6	µg/L	5	< 5	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/L	5	< 5	U
41	Naphthalene	91-20-3	µg/L	5	< 5	U
42	n-Propylbenzene	103-65-1	µg/L	5	< 5	U
43	Styrene	100-42-5	µg/L	5	< 5	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	5	< 5	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	< 5	U
46	Tetrachloroethene	127-18-4	µg/L	5	< 5	U
47	Toluene	108-88-3	µg/L	5	< 5	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/L	5	< 5	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/L	5	< 5	U
50	1,1,1-Trichloroethane	71-55-6	µg/L	5	< 5	U
51	1,1,2-Trichloroethane	79-00-5	µg/L	5	< 5	U
52	Trichloroethene	79-01-6	µg/L	5	< 5	U
53	Trichlorofluoromethane	75-69-4	µg/L	5	< 5	U
54	1,2,3-Trichloropropane	96-18-4	µg/L	5	< 5	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/L	5	< 5	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/L	5	< 5	U
57	Vinyl chloride	75-01-4	µg/L	5	< 5	U
58	o-Xylene	95-47-6	µg/L	5	< 5	U
59	m/p-Xylene	108-38-3	µg/L	5	< 5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	80-119	102
2	Dibromofluoromethane	1868-53-7	79-120	108
3	1,2-Dichloroethane-d4	17060-07-0	81-119	115
4	Toluene-d8	2037-26-5	81-118	85
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	125
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	133
3	Fluorobenzene	462-06-6	50-200	92
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8260

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-8	Received Date:	03/10/1999
Sample ID:	**99SY-US4F-S-1**	Sample Matrix	Soil	Moisture %:	26.9
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC/MS: X
Anal. Method:	8260	Prep. Date:	03/16/99	Anal. Date:	03/16/99
Batch No:	99G1942	Prep. No:	-	Anal. Time:	14:00
Data File Name:	2392-08	Sample Amount:	5 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Benzene	71-43-2	µg/kg	6.8	<6.8	U
2	Bromobenzene	108-86-1	µg/kg	6.8	<6.8	U
3	Bromochloromethane	74-97-5	µg/kg	6.8	<6.8	U
4	Bromodichloromethane	75-27-4	µg/kg	6.8	<6.8	U
5	Bromoform	75-25-2	µg/kg	6.8	<6.8	U
6	Bromomethane	74-83-9	µg/kg	6.8	<6.8	U
7	n-Butylbenzene	104-51-8	µg/kg	6.8	<6.8	U
8	sec-Butylbenzene	135-98-8	µg/kg	6.8	<6.8	U
9	tert-Butylbenzene	98-06-6	µg/kg	6.8	<6.8	U
10	Carbon tetrachloride	56-23-5	µg/kg	6.8	<6.8	U
11	Chlorobenzene	108-90-7	µg/kg	6.8	<6.8	U
12	Chlorodibromomethane	124-48-1	µg/kg	6.8	<6.8	U
13	Chloroethane	75-00-3	µg/kg	6.8	<6.8	U
14	Chloroform	67-66-3	µg/kg	6.8	<6.8	U
15	Chloromethane	74-87-3	µg/kg	6.8	<6.8	U
16	2-Chlorotoluene	95-49-8	µg/kg	6.8	<6.8	U
17	4-Chlorotoluene	106-43-4	µg/kg	6.8	<6.8	U
18	1,2-Dibromo-3-chloropropane (DB	96-12-8	µg/kg	6.8	<6.8	U
19	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	6.8	<6.8	U
20	Dibromomethane	74-95-3	µg/kg	6.8	<6.8	U
21	1,2-Dichlorobenzene	95-50-1	µg/kg	6.8	<6.8	U
22	1,3-Dichlorobenzene	541-73-1	µg/kg	6.8	<6.8	U
23	1,4-Dichlorobenzene	106-46-7	µg/kg	6.8	<6.8	U
24	Dichlorodifluoromethane	75-71-8	µg/kg	6.8	<6.8	U
25	1,1-Dichloroethane	75-34-3	µg/kg	6.8	<6.8	U
26	1,2-Dichloroethane	107-06-2	µg/kg	6.8	<6.8	U
27	1,1-Dichloroethene	75-35-4	µg/kg	6.8	<6.8	U
28	cis-1,2-Dichloroethene	156-59-2	µg/kg	6.8	<6.8	U
29	trans-1,2-Dichloroethene	156-60-5	µg/kg	6.8	<6.8	U
30	1,2-Dichloropropane	78-87-5	µg/kg	6.8	<6.8	U
31	1,3-Dichloropropane	142-28-9	µg/kg	6.8	<6.8	U
32	2,2-Dichloropropane	594-20-7	µg/kg	6.8	<6.8	U
33	1,1-Dichloropropene	563-58-6	µg/kg	6.8	<6.8	U
34	cis-1,3-Dichloropropene	10061-01-5	µg/kg	6.8	<6.8	U
35	trans-1,3-Dichloropropene	10061-02-6	µg/kg	6.8	<6.8	U
36	Ethylbenzene	100-41-4	µg/kg	6.8	<6.8	U
37	Hexachlorobutadiene	87-68-3	µg/kg	6.8	<6.8	U
38	Isopropylbenzene (Cumene)	98-82-8	µg/kg	6.8	<6.8	U
39	p-Isopropyltoluene	99-87-6	µg/kg	6.8	<6.8	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	Methylene chloride	75-09-2	µg/kg	6.8	<6.8	U
41	Naphthalene	91-20-3	µg/kg	6.8	<6.8	U
42	n-Propylbenzene	103-65-1	µg/kg	6.8	<6.8	U
43	Styrene	100-42-5	µg/kg	6.8	<6.8	U
44	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	6.8	<6.8	U
45	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	6.8	<6.8	U
46	Tetrachloroethene	127-18-4	µg/kg	6.8	<6.8	U
47	Toluene	108-88-3	µg/kg	6.8	<6.8	U
48	1,2,3-Trichlorobenzene	87-61-6	µg/kg	6.8	<6.8	U
49	1,2,4-Trichlorobenzene	120-82-1	µg/kg	6.8	<6.8	U
50	1,1,1-Trichloroethane	71-55-6	µg/kg	6.8	<6.8	U
51	1,1,2-Trichloroethane	79-00-5	µg/kg	6.8	<6.8	U
52	Trichloroethene	79-01-6	µg/kg	6.8	<6.8	U
53	Trichlorofluoromethane	75-69-4	µg/kg	6.8	<6.8	U
54	1,2,3-Trichloropropane	96-18-4	µg/kg	6.8	<6.8	U
55	1,2,4-Trimethylbenzene	95-63-6	µg/kg	6.8	<6.8	U
56	1,3,5-Trimethylbenzene	108-67-8	µg/kg	6.8	<6.8	U
57	Vinyl chloride	75-01-4	µg/kg	6.8	<6.8	U
58	o-Xylene	95-47-6	µg/kg	6.8	<6.8	U
59	m/p-Xylene	108-38-3	µg/kg	6.8	<6.8	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (BFB)	460-00-4	77-119	88
2	Dibromofluoromethane	1868-53-7	75-124	100
3	1,2-Dichloroethane-d4	17060-07-0	75-129	90
4	Toluene-d8	2037-26-5	80-119	82
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Chlorobenzene-d5	3114-55-4	50-200	102
2	1,4-Dichlorobenzene-d4	3855-82-1	50-200	103
3	Fluorobenzene	462-06-6	50-200	78
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 14, 1999

Matrix: Soil/Water

Parameters: Semivolatiles

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5d-W-11.8**
99SY-AD5e-S-9
99SY-AD5e-W-12
99SY-US4f-S-1
99SY-AD5d-S-9MS
99SY-AD5d-S-9MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 6 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-SINH-W-9MS/MSD (All water samples in SDG 99-2392)	Pentachlorophenol	8 (15-148)	9 (15-148)	-	J	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Semivolatiles - Data Qualification Summary - SDG 99-2392

SDG	Sample	Compound	Flag	A or P	Reason
99-2392	99SY-AD5d-W-11.8** 99SY-AD5e-W-12	Pentachlorophenol	J	A	Matrix spike/Matrix spike duplicates (%R)

Long Beach Naval Shipyard
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Semivolatiles - Field Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-1	Received Date:	03/10/1999
Sample ID:	**99SY-AD5B-S-1**	Sample Matrix	Soil	Moisture %:	4.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	17:22
Data File Name:	2392-01	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1000	< 1000	U
16	4-Chloroaniline	106-47-8	µg/kg	1000	< 1000	U
17	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
18	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
20	Chrysene	218-01-9	µg/kg	520	< 520	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
24	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1000	< 1000	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2600	< 2600	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2600	< 2600	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
37	Fluoranthene	206-44-0	µg/kg	520	< 520	U
38	Fluorene	86-73-7	µg/kg	520	< 520	U
39	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U
40	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
42	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
44	Isophorone	78-59-1	µg/kg	520	< 520	U
45	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	Naphthalene	91-20-3	µg/kg	520	< 520	U
49	2-Nitroaniline	88-74-4	µg/kg	2600	< 2600	U
50	3-Nitroaniline	99-09-2	µg/kg	2600	< 2600	U
51	4-Nitroaniline	100-01-6	µg/kg	2600	< 2600	U
52	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
53	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
54	4-Nitrophenol	100-02-7	µg/kg	2600	< 2600	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2600	< 2600	U
58	Phenanthrene	85-01-8	µg/kg	520	< 520	U
59	Phenol	108-95-2	µg/kg	520	< 520	U
60	Pyrene	129-00-0	µg/kg	520	< 520	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	520	< 520	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	60
2	2-Fluorophenol	367-12-4	25-103	53
3	Nitrobenzene-d5	4165-60-0	23-119	61
4	Phenol-d5	4165-62-2	24-112	55
5	Terphenyl-d14	1718-51-0	18-136	94
6	2,4,6-Tribromophenol	118-79-6	20-119	58
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	77
2	Chrysene-d12	1719-03-5	50-200	60
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	78
4	Naphthalene-d8	1146-65-2	50-200	77
5	Perylene-d12	1520-96-3	50-200	66
6	Phenanthrene-d10	1517-22-2	50-200	77
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-2	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-S-9**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	13:04
Data File Name:	2392-02	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	560	< 560	U
2	Acenaphthylene	208-96-8	µg/kg	560	< 560	U
3	Anthracene	120-12-7	µg/kg	560	< 560	U
4	Benz(a)anthracene	56-55-3	µg/kg	560	< 560	U
5	Benzo(a)pyrene	50-32-8	µg/kg	560	< 560	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	560	< 560	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	560	< 560	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	560	< 560	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	560	< 560	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	560	< 560	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	560	< 560	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	560	< 560	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	560	< 560	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	560	< 560	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1100	< 1100	U
16	4-Chloroaniline	106-47-8	µg/kg	1100	< 1100	U
17	2-Chloronaphthalene	91-58-7	µg/kg	560	< 560	U
18	2-Chlorophenol	95-57-8	µg/kg	560	< 560	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	560	< 560	U
20	Chrysene	218-01-9	µg/kg	560	< 560	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	560	< 560	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	560	< 560	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	560	< 560	U
24	Dibenzofuran	132-64-9	µg/kg	560	< 560	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	560	< 560	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	560	< 560	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	560	< 560	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1100	< 1100	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	560	< 560	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	560	< 560	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	560	< 560	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	560	< 560	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	2800	< 2800	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	2800	< 2800	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	560	< 560	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	560	< 560	U
37	Fluoranthene	206-44-0	µg/kg	560	< 560	U
38	Fluorene	86-73-7	µg/kg	560	< 560	U
39	Hexachlorobenzene	118-74-1	µg/kg	560	< 560	U
40	Hexachlorobutadiene	87-68-3	µg/kg	560	< 560	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	560	< 560	U
42	Hexachloroethane	67-72-1	µg/kg	560	< 560	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	560	< 560	U
44	Isophorone	78-59-1	µg/kg	560	< 560	U
45	2-Methylnaphthalene	91-57-6	µg/kg	560	< 560	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	560	< 560	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	560	< 560	U
48	Naphthalene	91-20-3	µg/kg	560	< 560	U
49	2-Nitroaniline	88-74-4	µg/kg	2800	< 2800	U
50	3-Nitroaniline	99-09-2	µg/kg	2800	< 2800	U
51	4-Nitroaniline	100-01-6	µg/kg	2800	< 2800	U
52	Nitrobenzene	98-95-3	µg/kg	560	< 560	U
53	2-Nitrophenol	88-75-5	µg/kg	560	< 560	U
54	4-Nitrophenol	100-02-7	µg/kg	2800	< 2800	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	560	< 560	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	560	< 560	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	2800	< 2800	U
58	Phenanthrene	85-01-8	µg/kg	560	< 560	U
59	Phenol	108-95-2	µg/kg	560	< 560	U
60	Pyrene	129-00-0	µg/kg	560	< 560	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	560	< 560	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	560	< 560	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	560	< 560	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	41
2	2-Fluorophenol	367-12-4	25-103	38
3	Nitrobenzene-d5	4165-60-0	23-119	42
4	Phenol-d5	4165-62-2	24-112	41
5	Terphenyl-d14	1718-51-0	18-136	62
6	2,4,6-Tribromophenol	118-79-6	20-119	36
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	108
2	Chrysene-d12	1719-03-5	50-200	92
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	100
5	Perylene-d12	1520-96-3	50-200	110
6	Phenanthrene-d10	1517-22-2	50-200	116
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-3	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-W-11.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/13/99	Anal. Date:	03/20/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	05:51
Data File Name:	2392-03	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	2	J
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	72
2	2-Fluorophenol	367-12-4	21- 99	62
3	Nitrobenzene-d5	4165-60-0	35-113	78
4	Phenol-d5	4165-62-2	10- 93	41
5	Terphenyl-d14	1718-51-0	33-140	105
6	2,4,6-Tribromophenol	118-79-6	10-122	69
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	79
2	Chrysene-d12	1719-03-5	50-200	62
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	94
4	Naphthalene-d8	1146-65-2	50-200	99
5	Perylene-d12	1520-96-3	50-200	74
6	Phenanthrene-d10	1517-22-2	50-200	81
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a] All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-4	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-S-9**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	12:18
Data File Name:	2392-04	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	590	< 590	U
2	Acenaphthylene	208-96-8	µg/kg	590	< 590	U
3	Anthracene	120-12-7	µg/kg	590	< 590	U
4	Benz(a)anthracene	56-55-3	µg/kg	590	< 590	U
5	Benzo(a)pyrene	50-32-8	µg/kg	590	< 590	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	590	< 590	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	590	< 590	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	590	< 590	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	590	< 590	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	590	< 590	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	590	< 590	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	590	< 590	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	590	< 590	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	590	< 590	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1200	< 1200	U
16	4-Chloroaniline	106-47-8	µg/kg	1200	< 1200	U
17	2-Chloronaphthalene	91-58-7	µg/kg	590	< 590	U
18	2-Chlorophenol	95-57-8	µg/kg	590	< 590	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	590	< 590	U
20	Chrysene	218-01-9	µg/kg	590	< 590	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	590	< 590	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	590	< 590	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	590	< 590	U
24	Dibenzofuran	132-64-9	µg/kg	590	< 590	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	590	< 590	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	590	< 590	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	590	< 590	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1200	< 1200	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	590	< 590	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	590	< 590	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	590	< 590	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	590	< 590	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3000	< 3000	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3000	< 3000	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	590	< 590	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	590	< 590	U
37	Fluoranthene	206-44-0	µg/kg	590	< 590	U
38	Fluorene	86-73-7	µg/kg	590	< 590	U
39	Hexachlorobenzene	118-74-1	µg/kg	590	< 590	U
40	Hexachlorobutadiene	87-68-3	µg/kg	590	< 590	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	590	< 590	U
42	Hexachloroethane	67-72-1	µg/kg	590	< 590	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	590	< 590	U
44	Isophorone	78-59-1	µg/kg	590	< 590	U
45	2-Methylnaphthalene	91-57-6	µg/kg	590	< 590	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	590	< 590	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	590	< 590	U
48	Naphthalene	91-20-3	µg/kg	590	< 590	U
49	2-Nitroaniline	88-74-4	µg/kg	3000	< 3000	U
50	3-Nitroaniline	99-09-2	µg/kg	3000	< 3000	U
51	4-Nitroaniline	100-01-6	µg/kg	3000	< 3000	U
52	Nitrobenzene	98-95-3	µg/kg	590	< 590	U
53	2-Nitrophenol	88-75-5	µg/kg	590	< 590	U
54	4-Nitrophenol	100-02-7	µg/kg	3000	< 3000	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	590	< 590	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	590	< 590	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3000	< 3000	U
58	Phenanthrene	85-01-8	µg/kg	590	< 590	U
59	Phenol	108-95-2	µg/kg	590	< 590	U
60	Pyrene	129-00-0	µg/kg	590	< 590	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	590	< 590	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	590	< 590	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	590	< 590	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	53
2	2-Fluorophenol	367-12-4	25-103	39
3	Nitrobenzene-d5	4165-60-0	23-119	54
4	Phenol-d5	4165-62-2	24-112	52
5	Terphenyl-d14	1718-51-0	18-136	75
6	2,4,6-Tribromophenol	118-79-6	20-119	47
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	111
2	Chrysene-d12	1719-03-5	50-200	94
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	92
4	Naphthalene-d8	1146-65-2	50-200	103
5	Perylene-d12	1520-96-3	50-200	112
6	Phenanthrene-d10	1517-22-2	50-200	117
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-5	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/13/99	Anal. Date:	03/20/99
Batch No:	99G1927	Prep. No:	1 of 1	Anal. Time:	03:04
Data File Name:	2392-05	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	< 10	U
2	Acenaphthylene	208-96-8	µg/L	10	< 10	U
3	Anthracene	120-12-7	µg/L	10	< 10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	< 10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	< 10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	< 10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	< 10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	< 10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	< 10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	< 10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	< 10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	< 10	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	< 10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	< 10	U
15	4-Chloro-3-methylphenol	59-50-7	µg/L	20	< 20	U
16	4-Chloroaniline	106-47-8	µg/L	20	< 20	U
17	2-Chloronaphthalene	91-58-7	µg/L	10	< 10	U
18	2-Chlorophenol	95-57-8	µg/L	10	< 10	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	< 10	U
20	Chrysene	218-01-9	µg/L	10	< 10	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	< 10	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	< 10	U
23	Dibenz(a,h)anthracene	53-70-3	µg/L	10	< 10	U
24	Dibenzofuran	132-64-9	µg/L	10	< 10	U
25	1,2-Dichlorobenzene	95-50-1	µg/L	10	< 10	U
26	1,3-Dichlorobenzene	541-73-1	µg/L	10	< 10	U
27	1,4-Dichlorobenzene	106-46-7	µg/L	10	< 10	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	< 10	U
29	2,4-Dichlorophenol	120-83-2	µg/L	10	< 10	U
30	Diethyl phthalate (DEP)	84-66-2	µg/L	10	< 10	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	< 10	U
32	2,4-Dimethylphenol	105-67-9	µg/L	10	< 10	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	50	< 50	U
34	2,4-Dinitrophenol	51-28-5	µg/L	50	< 50	U
35	2,4-Dinitrotoluene	121-14-2	µg/L	10	< 10	U
36	2,6-Dinitrotoluene	606-20-2	µg/L	10	< 10	U
37	Fluoranthene	206-44-0	µg/L	10	< 10	U
38	Fluorene	86-73-7	µg/L	10	< 10	U
39	Hexachlorobenzene	118-74-1	µg/L	10	< 10	U
40	Hexachlorobutadiene	87-68-3	µg/L	10	< 10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/L	10	< 10	U
42	Hexachloroethane	67-72-1	µg/L	10	< 10	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	< 10	U
44	Isophorone	78-59-1	µg/L	10	< 10	U
45	2-Methylnaphthalene	91-57-6	µg/L	10	< 10	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/L	10	< 10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	< 10	U
48	Naphthalene	91-20-3	µg/L	10	< 10	U
49	2-Nitroaniline	88-74-4	µg/L	50	< 50	U
50	3-Nitroaniline	99-09-2	µg/L	50	< 50	U
51	4-Nitroaniline	100-01-6	µg/L	50	< 50	U
52	Nitrobenzene	98-95-3	µg/L	10	< 10	U
53	2-Nitrophenol	88-75-5	µg/L	10	< 10	U
54	4-Nitrophenol	100-02-7	µg/L	50	< 50	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	< 10	U
56	N-Nitrosodiphenylamine	86-30-6	µg/L	10	< 10	U
57	Pentachlorophenol (PCP)	87-86-5	µg/L	50	< 50	~~U~~ UJ
58	Phenanthrene	85-01-8	µg/L	10	< 10	U
59	Phenol	108-95-2	µg/L	10	< 10	U
60	Pyrene	129-00-0	µg/L	10	< 10	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	< 10	U
62	2,4,5-Trichlorophenol	95-95-4	µg/L	10	< 10	U
63	2,4,6-Trichlorophenol	88-06-2	µg/L	10	< 10	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	43-115	53
2	2-Fluorophenol	367-12-4	21- 99	39
3	Nitrobenzene-d5	4165-60-0	35-113	57
4	Phenol-d5	4165-62-2	10- 93	30
5	Terphenyl-d14	1718-51-0	33-140	111
6	2,4,6-Tribromophenol	118-79-6	10-122	58
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	144
2	Chrysene-d12	1719-03-5	50-200	118
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	124
4	Naphthalene-d8	1146-65-2	50-200	138
5	Perylene-d12	1520-96-3	50-200	135
6	Phenanthrene-d10	1517-22-2	50-200	148
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a] All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method 8270

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-8	Received Date:	03/10/1999
Sample ID:	**99SY-US4F-S-1**	Sample Matrix	Soil	Moisture %:	26.9
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC/MS: Y
Anal. Method:	8270	Prep. Date:	03/12/99	Anal. Date:	03/18/99
Batch No:	99G1914	Prep. No:	1 of 1	Anal. Time:	16:39
Data File Name:	2392-08	Sample Amount:	30.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	680	< 680	U
2	Acenaphthylene	208-96-8	µg/kg	680	< 680	U
3	Anthracene	120-12-7	µg/kg	680	< 680	U
4	Benz(a)anthracene	56-55-3	µg/kg	680	< 680	U
5	Benzo(a)pyrene	50-32-8	µg/kg	680	< 680	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	680	< 680	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	680	< 680	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	680	< 680	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	680	< 680	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	680	< 680	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	680	< 680	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	680	< 680	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	680	< 680	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	680	< 680	U
15	4-Chloro-3-methylphenol	59-50-7	µg/kg	1400	< 1400	U
16	4-Chloroaniline	106-47-8	µg/kg	1400	< 1400	U
17	2-Chloronaphthalene	91-58-7	µg/kg	680	< 680	U
18	2-Chlorophenol	95-57-8	µg/kg	680	< 680	U
19	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	680	< 680	U
20	Chrysene	218-01-9	µg/kg	680	< 680	U
21	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	680	< 680	U
22	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	680	< 680	U
23	Dibenz(a,h)anthracene	53-70-3	µg/kg	680	< 680	U
24	Dibenzofuran	132-64-9	µg/kg	680	< 680	U
25	1,2-Dichlorobenzene	95-50-1	µg/kg	680	< 680	U
26	1,3-Dichlorobenzene	541-73-1	µg/kg	680	< 680	U
27	1,4-Dichlorobenzene	106-46-7	µg/kg	680	< 680	U
28	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1400	< 1400	U
29	2,4-Dichlorophenol	120-83-2	µg/kg	680	< 680	U
30	Diethyl phthalate (DEP)	84-66-2	µg/kg	680	< 680	U
31	Dimethyl phthalate (DMP)	131-11-3	µg/kg	680	< 680	U
32	2,4-Dimethylphenol	105-67-9	µg/kg	680	< 680	U
33	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3400	< 3400	U
34	2,4-Dinitrophenol	51-28-5	µg/kg	3400	< 3400	U
35	2,4-Dinitrotoluene	121-14-2	µg/kg	680	< 680	U
36	2,6-Dinitrotoluene	606-20-2	µg/kg	680	< 680	U
37	Fluoranthene	206-44-0	µg/kg	680	< 680	U
38	Fluorene	86-73-7	µg/kg	680	< 680	U
39	Hexachlorobenzene	118-74-1	µg/kg	680	< 680	U
40	Hexachlorobutadiene	87-68-3	µg/kg	680	< 680	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorocyclopentadiene	77-47-4	µg/kg	680	<680	U
42	Hexachloroethane	67-72-1	µg/kg	680	<680	U
43	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	680	<680	U
44	Isophorone	78-59-1	µg/kg	680	<680	U
45	2-Methylnaphthalene	91-57-6	µg/kg	680	<680	U
46	3/4-Methylphenol (m/p-Cresol)	106-44-5	µg/kg	680	<680	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	680	<680	U
48	Naphthalene	91-20-3	µg/kg	680	<680	U
49	2-Nitroaniline	88-74-4	µg/kg	3400	<3400	U
50	3-Nitroaniline	99-09-2	µg/kg	3400	<3400	U
51	4-Nitroaniline	100-01-6	µg/kg	3400	<3400	U
52	Nitrobenzene	98-95-3	µg/kg	680	<680	U
53	2-Nitrophenol	88-75-5	µg/kg	680	<680	U
54	4-Nitrophenol	100-02-7	µg/kg	3400	<3400	U
55	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	680	<680	U
56	N-Nitrosodiphenylamine	86-30-6	µg/kg	680	<680	U
57	Pentachlorophenol (PCP)	87-86-5	µg/kg	3400	<3400	U
58	Phenanthrene	85-01-8	µg/kg	680	<680	U
59	Phenol	108-95-2	µg/kg	680	<680	U
60	Pyrene	129-00-0	µg/kg	680	<680	U
61	1,2,4-Trichlorobenzene	120-82-1	µg/kg	680	<680	U
62	2,4,5-Trichlorophenol	95-95-4	µg/kg	680	<680	U
63	2,4,6-Trichlorophenol	88-06-2	µg/kg	680	<680	U

Surrogates			Control Limit, %	Surro. Rec.%
1	2-Fluorobiphenyl	321-60-8	30-114	51
2	2-Fluorophenol	367-12-4	25-103	53
3	Nitrobenzene-d5	4165-60-0	23-119	46
4	Phenol-d5	4165-62-2	24-112	49
5	Terphenyl-d14	1718-51-0	18-136	86
6	2,4,6-Tribromophenol	118-79-6	20-119	52
# of out-of-control				0

Internal Standard			Control Limit, %	IS Rec.%
1	Acenaphthene-d10	15067-26-2	50-200	72
2	Chrysene-d12	1719-03-5	50-200	60
3	1,4-Dichlorobenzene-d4	3855-82-1	50-200	66
4	Naphthalene-d8	1146-65-2	50-200	69
5	Perylene-d12	1520-96-3	50-200	69
6	Phenanthrene-d10	1517-22-2	50-200	75
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

N41699

18574

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 15, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5d-W-11.8
99SY-AD5e-S-9
99SY-AD5e-W-12
99SY-AD5d-S-9MS
99SY-AD5d-S-9MSD
99SY-AD5d-W-11.8MS
99SY-AD5d-W-11.8MSD

Introduction

This data review covers 5 soil samples and 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
99G1898-MB-01	3/11/99	TPH as gasoline	0.03 mg/L	All water samples in SDG 99-2392

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
99SY-AD5d-W-11.8	TPH as gasoline	0.09 mg/L	0.09U mg/L

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99-2392

SDG	Sample	Compound	Modified Final Concentration	A or P
99-2392	99SY-AD5d-W-11.8	TPH as gasoline	0.09U mg/L	A

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

C

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-1	Received Date:	03/10/1999
Sample ID:	**99SY-AD5B-S-1**	Sample Matrix	Soil	Moisture %:	4.0
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1893	Prep. No:	-	Anal. Time:	15:54
Data File Name:	2392.001	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.0	<1.0	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	4-Bromo-fluorobenzene (FID)	460-00-4		52-149	84	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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13765

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-2	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-S-9**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1893	Prep. No:	–	Anal. Time:	16:16
Data File Name:	2392.002	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.1	<1.1	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	52-149	87
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

1376

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-3	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-W-11.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1898	Prep. No:	-	Anal. Time:	20:05
Data File Name:	2392.003	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	0.09	U

Surrogates		Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID) 460-00-4	54-133	93
# of out-of-control			0

[a] All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

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Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/199
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-4	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-S-9**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: B
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1893	Prep. No:	–	Anal. Time:	16:39
Data File Name:	2392.004	Sample Amount:	5.0 g	Dilution Factor:	1
Methanol Vol.	–				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/kg	1.2	< 1.2	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	52-149	89
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

18771

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015V

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-5	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	5030	Instrument ID:	GC: N
Anal. Method:	M8015V	Prep. Date:	03/11/99	Anal. Date:	03/11/99
Batch No:	99G1898	Prep. No:	-	Anal. Time:	20:30
Data File Name:	2392.005	Sample Amount:	5.0 mL	Dilution Factor:	1
Methanol Vol.	-				
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Gasoline	8006-61-9	mg/L	0.05	< 0.05	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-Bromo-fluorobenzene (FID)	460-00-4	54-133	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a]All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

3/11/1999

18773

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 19, 1999

Matrix: Soil/Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: NFESC Level C & D

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5d-W-11.8**
99SY-AD5e-S-9
99SY-AD5e-W-12
99SY-AD5d-S-9MS
99SY-AD5d-S-9MSD

**Indicates sample underwent NFESC Level D review

Introduction

This data review covers 5 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
99SY-AD5b-S-1	Octacosane	162 (50-149)	TPH as extractables	J (all detects)	A

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG 99-2392	TPH as extractables	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 99-2392

SDG	Sample	Compound	Flag	A or P	Reason
99-2392	99SY-AD5b-S-1	TPH as extractables	J (all detects)	A	Surrogate recovery (%R)
99-2392	99SY-AD5d-W-11.8** 99SY-AD5e-W-12	TPH as extractables	None	P	Matrix spike/Matrix spike duplicates

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-1	Received Date:	03/10/1999
Sample ID:	**99SY-AD5B-S-1**	Sample Matrix	Soil	Moisture %:	4.0
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	21:34
Data File Name:	2392.101	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	10	27	J
2	Motor oil		mg/kg	10	87	J

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	162
# of out-of-control				1

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

18853

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-2	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-S-9**	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	11:38
Data File Name:	2392.002	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	11	<11	U
2	Motor oil		mg/kg	11	<11	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	140
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/8/99

18860

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-3	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-W-11.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/25/99
Batch No:	99G1904	Prep. No:	1 of 1	Anal. Time:	11:48
Data File Name:	2392.103	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	0.1	J
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	97
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a]All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

13862

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-4	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-S-9**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample	Prep. Method:	3550	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1903	Prep. No:	1 of 1	Anal. Time:	12:04
Data File Name:	2392.004	Sample Amount:	20.0 g	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/kg	12	<12	U
2	Motor oil		mg/kg	12	<12	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	126
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/1999

13864

Applied P & Ch Laboratory

Organic Analysis Results for Method M8015E

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-5	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-W-12**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample	Prep. Method:	3510	Instrument ID:	GC: W
Anal. Method:	M8015E	Prep. Date:	03/11/99	Anal. Date:	03/15/99
Batch No:	99G1904	Prep. No:	1 of 1	Anal. Time:	01:13
Data File Name:	2392.005	Sample Amount:	1000 mL	Dilution Factor:	1
Extract Vol.	1.0 mL				

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Diesel	11-84-7	mg/L	0.5	<0.5	U
2	Motor oil		mg/L	0.5	<0.5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	Octacosane, C_{28}	630-02-4	50-149	128
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.
[a]All sample bottles were received preserved, analysis was not done.

Qualifier: U - Not Detected or less than MDL
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)
E - Exceed calibration range
B - A positive value was found in the method blank
D - Diluted

4/19/99

18866

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 12, 1999

Matrix: Soil/Water

Parameters: Metals

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5d-W-11.8
99SY-AD5e-S-9
99SY-AD5e-W-12
99SY-SWbg-W-20
99SY-US4f-S-1
99SY-AD5d-S-9MS
99SY-AD5d-S-9MSD
99SY-AD5d-S-9DUP
99SY-AD5d-W-11.8MS
99SY-AD5d-W-11.8MSD
99SY-AD5d-W-11.8DUP

Introduction

This data review covers 7 soil samples and 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Barium Beryllium Cadmium Copper Lead Mercury Zinc	1.0 ug/L 0.1 ug/L 0.2 ug/L 3.0 ug/L 1.1 ug/L 0.1 ug/L 1.0 ug/L	All soil samples in SDG 99-2392
PB (prep blank)	Cadmium Copper Thallium Vanadium	0.17 ug/L 2.4 ug/L 2.0 ug/L 0.84 ug/L	All water samples in SDG 99-2392
ICB/CCB	Antimony Cadmium Copper Lead Nickel Vanadium Molybdenum	2.1 ug/L 0.3 ug/L 2.7 ug/L 1.8 ug/L 0.4 ug/L 0.8 ug/L 0.8 ug/L	All water samples in SDG 99-2392

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
99SY-AD5d-S-9	Cadmium Mercury	0.031 mg/Kg 0.082 mg/Kg	0.031U mg/Kg 0.082U mg/Kg
99SY-US4f-S-1	Mercury	0.029 mg/Kg	0.029U mg/Kg
99SY-AD5d-W-11.8	Copper Lead Vanadium	3.3 ug/L 5.1 ug/L 1.1 ug/L	3.3U ug/L 5.1U ug/L 1.1U ug/L
99SY-AD5e-W-12	Copper Lead Vanadium	3.8 ug/L 3.4 ug/L 0.88 ug/L	3.8U ug/L 3.4U ug/L 0.88U ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
99SY-AD5d-S-9MS/MSD (All soil samples in SDG 99-2392)	Arsenic Zinc	74 (75-125) 32 (75-125)	- 34 (75-125)	- -	J J	A
99SY-AD5d-W-11.8MS/MSD (99SY-AD5d-W-11.8 99SY-AD5e-W-12)	Thallium	72 (75-125)	71 (75-125)	-	J	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
Metals - Data Qualification Summary - SDG 99-2392

SDG	Sample	Analyte	Flag	A or P	Reason
99-2392	99SY-AD5b-S-1 99SY-AD5d-S-9 99SY-AD5e-S-9 99SY-US4f-S-1	Arsenic Zinc	J J	A	Matrix spike/Matrix spike duplicates (%R)
99-2392	99SY-AD5d-W-11.8 99SY-AD5e-W-12	Thallium	J	A	Matrix spike/Matrix spike duplicates (%R)

Long Beach Naval Shipyard
Metals - Laboratory Blank Data Qualification Summary - SDG 99-2392

SDG	Sample	Analyte	Modified Final Concentration	A or P
99-2392	99SY-AD5d-S-9	Cadmium Mercury	0.031U mg/Kg 0.082U mg/Kg	A
99-2392	99SY-US4f-S-1	Mercury	0.029U mg/Kg	A
99-2392	99SY-AD5d-W-11.8	Copper Lead Vanadium	3.3U ug/L 5.1U ug/L 1.1U ug/L	A
99-2392	99SY-AD5e-W-12	Copper Lead Vanadium	3.8U ug/L 3.4U ug/L 0.88U ug/L	A

Long Beach Naval Shipyard
Metals - Field Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-1	Received Date:	03/10/1999
Sample ID:	**99SY-AD5B-S-1**	Sample Matrix	Soil	Moisture %:	4.0
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.2	1.4	B	P		99M1459L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	mg/kg	0.31	2.7		P	J	99M1459L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	mg/kg	1.0	65.9		P		99M1459L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	mg/kg	0.21	< 0.0057	U	P		99M1459L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	mg/kg	0.21	0.33		P		99M1459L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	mg/kg	0.52	15.5		P		99M1459L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	mg/kg	0.52	3.5		P		99M1459L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	mg/kg	0.52	43.1		P		99M1459L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	mg/kg	0.31	110		P		99M1459L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	mg/kg	0.21	0.085	B	CV		99M1473N	03/16/99	03/16/99	1	7470
Molybdenum	7439-98-7	mg/kg	0.21	< 0.023	U	P		99M1459L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	mg/kg	0.31	9.4		P		99M1459L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	mg/kg	0.52	< 0.16	U	P		99M1459L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	mg/kg	0.52	< 0.042	U	P		99M1459L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	mg/kg	5.2	< 0.083	U	P		99M1459L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	mg/kg	0.52	13.1		P		99M1459L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	mg/kg	0.52	85.4		P	J	99M1459L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

2

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-2	Received Date:	03/10/1999
Sample ID:	99SY-AD5D-S-9	Sample Matrix	Soil	Moisture %:	11.4
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.6	0.19	B	P		99M1459L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	mg/kg	0.34	13.4		P	J	99M1459L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	mg/kg	1.1	109		P		99M1459L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	mg/kg	0.23	< 0.0062	U	P		99M1459L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	mg/kg	0.23	0.031	~~B~~	P	U	99M1459L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	mg/kg	0.56	26.9		P		99M1459L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	mg/kg	0.56	9.6		P		99M1459L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	mg/kg	0.56	20.1		P		99M1459L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	mg/kg	0.34	10.3		P		99M1459L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	mg/kg	0.23	0.082	~~B~~	CV	U	99M1473N	03/16/99	03/16/99	1	7470
Molybdenum	7439-98-7	mg/kg	0.23	< 0.025	U	P		99M1459L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	mg/kg	0.34	20.1		P		99M1459L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	mg/kg	0.56	< 0.17	U	P		99M1459L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	mg/kg	0.56	< 0.045	U	P		99M1459L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	mg/kg	5.6	< 0.090	U	P		99M1459L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	mg/kg	0.56	30.7		P		99M1459L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	mg/kg	0.56	52.7		P	J	99M1459L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-3	Received Date:	03/10/1999
Sample ID:	**99SY-AD5D-W-11.8**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	12.1		P		99M1458L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	µg/L	5	5.4		P		99M1458L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	µg/L	10	113		P		99M1458L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	µg/L	2	<0.11	U	P		99M1458L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1458L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	µg/L	5	4.9	B	P		99M1458L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	µg/L	5	2.3	B	P		99M1458L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	µg/L	10	3.3	~~B~~	P	U	99M1458L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	µg/L	5	5.1		P	U	99M1458L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1462N	03/15/99	03/15/99	1	7470
Molybdenum	7439-98-7	µg/L	5	13.3		P		99M1458L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	µg/L	5	4.1	B	P		99M1458L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	µg/L	10	4.1	B	P		99M1458L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1458L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	µg/L	10	<1.6	~~U~~	P	UJ	99M1458L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	µg/L	10	1.1	~~B~~	P	U	99M1458L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	µg/L	5	7.3		P		99M1458L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-4	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-S-9**	Sample Matrix	Soil	Moisture %:	15.7
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	5.9	< 0.089	U	P		99M1459L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	mg/kg	0.36	1.6		P	J	99M1459L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	mg/kg	1.2	64.6		P		99M1459L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	mg/kg	0.24	< 0.0065	U	P		99M1459L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	mg/kg	0.24	< 0.010	U	P		99M1459L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	mg/kg	0.59	11.0		P		99M1459L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	mg/kg	0.59	6.6		P		99M1459L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	mg/kg	0.59	8.2		P		99M1459L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	mg/kg	0.36	2.3		P		99M1459L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	mg/kg	0.24	< 0.058	U	CV		99M1473N	03/16/99	03/16/99	1	7470
Molybdenum	7439-98-7	mg/kg	0.24	< 0.026	U	P		99M1459L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	mg/kg	0.36	9.2		P		99M1459L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	mg/kg	0.59	< 0.18	U	P		99M1459L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	mg/kg	0.59	< 0.047	U	P		99M1459L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	mg/kg	5.9	< 0.095	U	P		99M1459L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	mg/kg	0.59	20.4		P		99M1459L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	mg/kg	0.59	30.5		P	J	99M1459L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-5	Received Date:	03/10/1999
Sample ID:	**99SY-AD5E-W-12**	Sample Matrix	Water	Moisture %:	–
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	µg/L	10	10.9		P		99M1458L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	µg/L	5	3.8	B	P		99M1458L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	µg/L	10	80.3		P		99M1458L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	µg/L	2	<0.11	U	P		99M1458L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	µg/L	2	<0.17	U	P		99M1458L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	µg/L	5	4.5	B	P		99M1458L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	µg/L	5	<0.29	U	P		99M1458L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	µg/L	10	3.8	~~B~~	P	U	99M1458L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	µg/L	5	3.4	~~B~~	P	U	99M1458L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	µg/L	0.5	<0.097	U	CV		99M1462N	03/15/99	03/15/99	1	7470
Molybdenum	7439-98-7	µg/L	5	13.4		P		99M1458L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	µg/L	5	3.5	B	P		99M1458L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	µg/L	10	3.9	B	P		99M1458L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	µg/L	10	<0.80	U	P		99M1458L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	µg/L	10	<1.6	~~U~~	P	UJ	99M1458L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	µg/L	10	0.88	~~B~~	P	U	99M1458L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	µg/L	5	5.6		P		99M1458L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Applied P & Ch Laboratory

Metal Analysis Results

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-7	Received Date:	03/10/1999
Sample ID:	**99SY-SWBG-W-20**	Sample Matrix	Water	Moisture %:	-
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Mercury, Hg	7439-97-6	µg/L	0.5	< 0.097	U	CV		99M1462N	03/15/99	03/15/99	1	7470

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Metal Analysis Results

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Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Collection Date:	03/10/1999
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB
		Lab Sample ID:	99-2392-8	Received Date:	03/10/1999
Sample ID:	**99SY-US4F-S-1**	Sample Matrix	Soil	Moisture %:	26.9
Sample Type:	Field Sample				

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Antimony	7440-36-0	mg/kg	6.8	< 0.10	U	P		99M1459L	03/15/99	03/15/99	1	6010
Arsenic	7440-38-2	mg/kg	0.41	7.7		P	J	99M1459L	03/15/99	03/15/99	1	6010
Barium	7440-39-3	mg/kg	1.4	150		P		99M1459L	03/15/99	03/15/99	1	6010
Beryllium	7440-41-7	mg/kg	0.27	< 0.0075	U	P		99M1459L	03/15/99	03/15/99	1	6010
Cadmium	7440-43-9	mg/kg	0.27	< 0.012	U	P		99M1459L	03/15/99	03/15/99	1	6010
Chromium	7440-47-3	mg/kg	0.68	31.8		P		99M1459L	03/15/99	03/15/99	1	6010
Cobalt	7440-48-4	mg/kg	0.68	15.1		P		99M1459L	03/15/99	03/15/99	1	6010
Copper	7440-50-8	mg/kg	0.68	35.5		P		99M1459L	03/15/99	03/15/99	1	6010
Lead	7439-92-1	mg/kg	0.41	8.1		P		99M1459L	03/15/99	03/15/99	1	6010
Mercury	7439-97-6	mg/kg	0.27	0.029	~~B~~	CV	U	99M1473N	03/16/99	03/16/99	1	7470
Molybdenum	7439-98-7	mg/kg	0.27	< 0.030	U	P		99M1459L	03/15/99	03/15/99	1	6010
Nickel	7440-02-0	mg/kg	0.41	29.9		P		99M1459L	03/15/99	03/15/99	1	6010
Selenium	7782-49-2	mg/kg	0.68	0.23	B	P		99M1459L	03/15/99	03/15/99	1	6010
Silver	7440-22-4	mg/kg	0.68	< 0.055	U	P		99M1459L	03/15/99	03/15/99	1	6010
Thallium	7440-28-0	mg/kg	6.8	< 0.11	U	P		99M1459L	03/15/99	03/15/99	1	6010
Vanadium	7440-62-2	mg/kg	0.68	46.4		P		99M1459L	03/15/99	03/15/99	1	6010
Zinc	7440-66-6	mg/kg	0.68	77.0		P	J	99M1459L	03/15/99	03/15/99	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control * - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Long Beach Naval Shipyard

Collection Date: March 10, 1999

LDC Report Date: April 12, 1999

Matrix: Soil

Parameters: pH

Validation Level: NFESC Level C

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 99-2392

Sample Identification

99SY-AD5b-S-1
99SY-AD5d-S-9
99SY-AD5e-S-9
99SY-US4f-S-1
99SY-AD5b-S-1DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet. The analyses were per EPA SW 846 Method 9045B for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

Not applicable to this method.

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Long Beach Naval Shipyard
pH - Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Laboratory Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Long Beach Naval Shipyard
pH - Field Blank Data Qualification Summary - SDG 99-2392

No Sample Data Qualified in this SDG

Applied P & Ch Laboratory

Wet Analysis Results for Method 9040

Client Name:	CDM Federal Programs Corp.	Project No:	6210-014	Anal. Method	9040
Project ID:	LBNSY AOCs	Service ID:	992392	Collected by:	DB/BB

Component Name: pH
CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-2392-1	99SY-AD5B-S-1	Soil	03/10/99	03/10/99	03/11/99	99W2443	pH unit	0.01	9.94	
99-2392-2	99SY-AD5D-S-9	Soil	03/10/99	03/10/99	03/11/99	99W2443	pH unit	0.01	8.42	
99-2392-4	99SY-AD5E-S-9	Soil	03/10/99	03/10/99	03/11/99	99W2443	pH unit	0.01	8.94	
99-2392-8	99SY-US4F-S-1	Soil	03/10/99	03/10/99	03/11/99	99W2443	pH unit	0.01	8.92	
99W2443-MB-01		Soil	03/11/99	03/11/99	03/11/99	99W2443	pH unit	0.01	6.05	

[a] All sample bottles were received preserved, analysis was not done.

Note: Q - Qualifier.
Qualifier: U - Not Detected or less than MDL
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

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Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custo

Please Print in pen Page 1 of 1

Client: CDM Federal | Contact: Dave Bjostad | Tel #: 619-268-3383 | Fax #: 619-268-9677

Address: 3760 Convoy St., Ste. 210 | City: San Diego | State: CA | Zip code: 92111

Bill to: CDM - Denver, CO

Project Name/Code: LBNSY AOCs | Job #: 6210-014 | P.O. #

Project Address: Long Beach Naval Shipyard | APCL Quotation #

Due Date: [X] regular [ ] rush: ___ days ___ hours | Sampled by: D. Bjostad

Analysis Items: VOCs 8260B; SVOCs 8270C; Metals 6010C; TPH-P+T 8015m; TPH-ext. 8015m; pH 4040/9045; Mercury

White - With report
Yellow - Lab copy
Pink - Originator

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Remarks
	995Y-U54f-S-1	3/10/99	0725	soil	4°C	2	
	995Y-BT1w-11		0825	water	HCl	2	
	995Y-AD5d-S-9		0900	soil	4°C	DA 23	MS/MSD
	995Y-AD5d-W-11.8		0930	water	VOA vials HCl, metals-HNO_3	9	MS/MSD for metals
	995Y-AD5e-S-9		1100	soil	4°C	2	
	995Y-AD5e-W-12		1125	water	HCl, HNO_3	7	
	995Y-AD5b-S-1		1255	soil	4°C	2	
9 FB 3/10/99	995Y-AD5b-W-			water	HCl, HNO_3		
	995Y-SWbg-W-20	3/10/99	1340	water	HNO_3	1	

QC Requirement: [ ] Regular; [ ] QA/QC Report; [ ] WIP; [X] Raw Data; [ ] Extended Raw Data [ ] CLP; [ ] ACE [ ] AFCEE [X] NEESA ___ (E, C or D); [ ] Other _____ (Please specify)

Sample Disposal: [ ] Return [X] Disposal by APCL [ ] Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: [ ] Intact; [ ] Broken. Cooler Seal: [ ] Intact; [ ] Broken; [ ] None. Tag # _____ Temperature: [ ] Room [ ] Cold (_____ °C).

Relinquished by Dave Bjostad Date/Time 3/10/99 /1630 Received by Date/Time /

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

APPENDIX P

1999 PORT OF LONG BEACH (POLB) SAMPLING REPORT FOR THREE AOCs

CPM copy

URS Greiner Woodward Clyde
A Division of URS Corporation

2020 East First Street, Suite 400
Santa Ana, CA 92705
Tel: 714.835.6886
Fax: 714.667.7147
Offices Worldwide

February 23, 1999
57974W010X-2000

Geraldine Knatz, Ph.D.
Director of Planning
The Port of Long Beach
925 Harbor Plaza
P.O. Box 570
Long Beach, California 90801-0570

SUBJECT: SITE INVESTIGATION RESULTS
WAREHOUSE A, BUILDING P-11, AND BUILDING 50
FORMER LONG BEACH NAVAL SHIPYARD
(Reference Contract No. HD-5858, Job Task 9922)

Dear Dr. Knatz:

URS Greiner Woodward Clyde (URSGWC) is pleased to present the results of the site investigation conducted at Building 50, Building P-11, and Warehouse A located at the former Long Beach Naval Shipyard. The location of the site and site plan are provided in Figures 1 and 2, respectively. The scope of work was conducted pursuant to your verbal request on December 29, 1998. This letter report summarize the objectives, background, scope of work, field activities, analytical results and recommendations.

OBJECTIVE

The objective of this investigation is to evaluate shallow soil and groundwater conditions adjacent to the sumps identified at Building P-11 and Warehouse A prior to site demolition activities. In addition, samples of the wood block floor inside Building 50 were to be analyzed for waste disposal classification purposes.

BACKGROUND

A background discussion of Building 50, Building P-11, and Warehouse A is provided below.

Building 50

Building 50 was used for general storage, packing, and shipping operations. Wood block floors exist at three locations. As part of the packing and preservation operations, two aboveground process tanks were used in Building 50; one of which was a de-rusting tank that held approximately 270 gallons of Tec 360-acid (cleaner with solvents), phosphoric acid, wetting agents, and chromate inhibitor (Brown and Caldwell, 1969). This solution was discharged to a

The second tank was a Tri-Co tank that held approximately 50 gallons of trichloroethylene that was hauled away by LBNSY for disposal every 6 months (Brown and Caldwell, 1969).

During the October 21, 1998 site walk, floor staining was observed. Therefore, regulatory agencies recommended one sample be taken from the stained area of the wood floor for waste classification purposes.

Building P-11

During the site visit, a 1-foot by 1-foot open drain in the asphalt pavement was observed outside the southeast corner of the building. Its function and discharge location are unknown. Regulatory agencies recommended one sampling location adjacent to the drain.

Warehouse A

Warehouse A was typically used for storing refurbished and new diesel engines for the past 15 to 20 years. A 3-foot by 10-foot by 2-foot deep below-ground sump in the floor was observed inside the eastern portion of Warehouse A. Its use or discharge location is unknown. Regulatory agencies recommended one sampling location adjacent to the drain within the sump. The Regional Water Quality Control Board (RWQCB) guidance provided during the BCT meeting on December 14th indicated that the sample should be collected beneath the sump.

SCOPE OF WORK

The following scope of work was conducted to accomplish the project objectives outlined above:

- ***Building 50***: One wood block sample was collected from an area stained with oil. Additionally, for comparison purposes, one wood block sample was collected from an area without staining. These samples were collected from the northern portion of Building 50 (Figure 3).
- ***Building P-11***: One soil and one groundwater sample was collected adjacent to the drain located outside the southeast corner of Building P-11 (Figure 4). Additionally, samples of the drain contents (fluid and sludge) were collected for waste disposal purposes.
- ***Warehouse A***: One soil and one groundwater sample was collected adjacent to the sump located in the eastern portion of the warehouse (Figure 5).

FIELD ACTIVITIES

This section summarizes the field activities conducted at Building 50, Building P-11, and Warehouse A. The field work was conducted on January 6, 1999. During the field activities, the following regulatory agencies were present to observe sampling locations and procedures: Environmental Protection Agency (USEPA), and Department of Toxic Substances Control

(DTSC). Following the field investigation, the sampling locations were surveyed (horizontal and vertical) by Dulin & Boynton of Signal Hill, California. The survey data is provided in Attachment A.

Building 50

Two wood block samples were collected from the northern portion of Building 50 for waste characterization prior to disposal. One sample was collected from an oil-stained area (labeled as WB-1) and the other sample was collected from an area without staining (labeled as WB-2). The samples were dislodged using a steel pry bar, placed in plastic bags, and stored in a cooler containing ice. The samples were delivered to Calscience Environmental Laboratory, Inc. (Calscience) of Garden Grove, California under chain-of-custody and analyzed using the EPA test methods summarized on Table 1.

Building P-11

Soil and groundwater samples were collected adjacent to the drain located outside of Building P-11 using a direct-push sampling rig. The rig initially attempted to collect samples from below the drain, but the sampling probe could not be advanced through the drain's concrete-lined bottom. Grab samples of the liquid and sludge present in the drain were also collected for waste disposal classification purposes. Field sampling procedures are provided in Attachment B.

The soil sampling probe was advanced approximately 1 foot to the east of the drain and soil samples were collected at the following depth intervals: 3-5 feet below ground surface (bgs), 5-7 feet bgs, and 10-12 feet bgs. During soil sampling activities, groundwater was first encountered at approximately 12 feet bgs. The HydroPunch sampling probe was subsequently advanced adjacent to the soil sampling location to a depth of approximately 15 feet bgs. The screened portion of the probe was exposed between 11-15 feet bgs and groundwater samples were collected from this depth interval. Following the collection of soil and groundwater samples, each borehole was backfilled with bentonite.

The soil, groundwater, and drain samples were stored in a cooler containing ice and transported to Calscience under chain-of-custody. The soil sample collected between 3-5 feet bgs (labeled as P-11-3-5) was selected for analysis since the base of the drain was located at this depth interval. The remaining samples were placed on hold.

The soil, groundwater, and sump samples were was analyzed using the EPA test methods summarized on Table 1.

Warehouse A

Soil and groundwater samples were collected adjacent to the sump located in the eastern portion of the warehouse using a direct-push sampling rig. Grab samples of the contents in the sump

were proposed, however, these samples were not collected due to the insufficient volume of liquids in the sump. Field sampling procedures are provided in Attachment B.

The soil sampling probe was advanced approximately 1 foot to the east of the sump and soil samples were collected at the following depth intervals: 3-5 feet bgs, 5-7 feet bgs, and 10-12 feet bgs. During soil sampling activities, groundwater was first encountered at approximately 10 feet bgs. The HydroPunch sampling probe was subsequently advanced adjacent to the soil sampling location to a depth of approximately 14 feet bgs. The screened portion of the probe was exposed between 10-14 feet bgs and groundwater samples were collected from this depth interval. Following the collection of soil and groundwater samples, each borehole was backfilled with bentonite.

The soil and groundwater samples were stored in a cooler containing ice and transported to Calscience under chain-of-custody. The soil sample collected between 5-7 feet bgs (labeled as W-A-5-7) was selected for analysis since the base of the sump was located at this depth interval.

Soil and groundwater samples were analyzed using the EPA test methods summarized on Table 1.

Quality Assurance/Quality Control Samples

For quality assurance/quality control (QA/QC) purposes, duplicate soil and groundwater samples were collected concurrent with the field samples to evaluate the repeatability of the laboratory analyses, one equipment rinseate blank was collected following the sampling activities to evaluate the adequacy of decontamination procedures, and one trip blank sample (prepared by the laboratory) was submitted for analysis to check sample handling procedures.

Duplicate soil and groundwater samples were collected from the same sampling probes as the original samples and were analyzed for the same analyses. The duplicate soil sample collected between 3-5 feet bgs (labeled as P-111-3-5) was selected for analysis since the original sample (labeled as P-11-3-5) was selected for analysis at the same depth interval. The duplicate groundwater samples (labeled as P-111) were collected following the collection of the original samples (labeled as P-11).

The equipment rinseate sample was collected by pouring de-ionized water into the stainless steel bailer used to collect the groundwater samples. The equipment rinseate sample (labeled as EB-1) was analyzed for volatile organic compounds (VOCs) by EPA Method 8260. Additionally, the trip blank sample (labeled as TB-0101) was analyzed for VOCs by EPA Method 8260.

ANALYTICAL RESULTS

This section summarizes the analytical results of the samples collected during the site investigation activities. The analytical results for the soil and sludge samples collected at Building P-11 and the soil samples collected at Warehouse A are presented in Tables 2 and 3. The analytical results for the groundwater samples collected at Building P-11 and Warehouse A are presented in Tables 4 and 5. The analytical results for the wood block sampled collected at Building 50 are presented in Tables 6 through 9. The analytical laboratory reports and chain of custody forms are provided in Attachment C.

Building 50

Analytical results from the wood block samples identified the presence of VOCs, semi-volatile organic compounds (SVOCs), PCBs, metals, TPH-g, and TPH-e. Analytical results indicated the following:

- VOCs were detected in samples WB-1 and WB-2. Specifically, the VOCs include acetone, p-isopropyl-toluene, 4-methyl 2-pentanone, naphthalene, and toluene at concentrations ranging from 0.200 milligrams per kilogram (mg/kg) to 57.2 mg/kg.
- SVOCs detected in samples WB-1 and WB-2. Specifically, the SVOCs include phenol, 4-methyl phenol, 2,4-dimethyl phenol, naphthalene, 2-methyl naphthalene, 1-methyl naphthalene, acenaphthylene, acenaphthene, dibenzofuran, flourene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a) anathracene, chrysene, and benzo(b) fluoranthene at concentrations ranging from 60 mg/kg to 2,970 mg/kg.
- PCBs (Aroclor-1260) were detected in sample WB-1 at a concentration of 8.68 mg/kg.
- Metals were detected in samples WB-1 and WB-2. Specifically, the metals include antimony, arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, vanadium, and zinc at concentrations ranging from 0.76 mg/kg in Table 9 to 91.3 mg/kg.
- TPH-g was detected in samples WB-1 and WB-2 at concentrations of 9.9 mg/kg and 1,430 mg/kg, respectively. reverse
- TPH-e was detected in samples WB-1 and WB-2 at total concentrations of 4,803 mg/kg and 7,073 mg/kg, respectively.
- Cyanide was not detected at/or above the laboratory reporting limit.

Building P-11

Soil analytical results for metals from samples (P-11-3-5 and P-111-3-5 [duplicate sample]) identified metals concentrations below the background concentrations established for the Naval

Complex (Table 3) with two exceptions. These exceptions were for the detection of cobalt and selenium in the duplicate sample just above the background concentration established for the Naval Complex. The detectable presence of VOCs, SVOCs, PCBs, TPH-g, TPH-d, and oil and grease were not identified at/or above the laboratory reporting limits.

Groundwater analytical results from sample P-11 and P-111 (duplicate sample) indicated 4 milligrams per liter (mg/L) and 8 mg/L of oil and grease, respectively. Groundwater analytical results from sample P-11 and P-111 (duplicate sample) for VOCs identified the presence of 1.8 micrograms-per-liter (ug/L) and 1.0 ug/L, respectively, of methyl tert-butyl ether. Additionally, analytical results indicated the presence of several metals in the groundwater most at concentrations below the background concentrations established for the Naval Complex except for arsenic (Table 5). Arsenic was detected at a concentration of 0.021 mg/L, just above the background value of 0.0185 mg/L. The detectable presence of SVOCs, PCBs, TPH-g, and TPH-d were not identified at or above the laboratory reporting limits.

Sump sludge analytical results from the sample labeled P-11-Sump [sludge] for SVOCs identified only one compound, Bis (2-Ethylhexyl) Phthalate at a concentration of 4.7 mg/kg. The pH of the sludge was reported at 7.67. Additionally, analytical results for metals did not identify any concentrations above the established Total Threshold Limit Concentration (TTLC). However, cadmium, chromium, copper, and lead were detected at concentrations of 12.1 mg/kg, 157 mg/kg, and 292 mg/kg, respectively, which are 10 times greater than the soluble threshold limit concentration (STLC) for cadmium (1 mg/kg), chromium (5 mg/kg), and lead (5 mg/kg). The sludge sample was subsequently analyzed using the waste extraction test (WET) to evaluate if sludge exceeded the established STLCs for waste characterization purposes. Analytical results from the WET indicated 0.81 mg/L of cadmium and 6.39 mg/L of lead. Chromium was not detected above the laboratory reporting limit using the WET.

Analytical results from the fluid collected inside the drain (labeled as P-11-Sump [water]) indicated a pH of 6.02. Additionally, analytical results indicated the presence of metals, specifically antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc at concentrations ranging from 0.0039 mg/L to 40.3 mg/L. All metals concentrations were below 1 mg/L except for copper and zinc (28.3 mg/L and 40.3, respectively). The presence of SVOCs were not detected at or above the laboratory reporting limits.

Warehouse A

Analytical results from soil sample W-A-5-7 indicated a pH of 6.07. Additionally, soil analytical results identified metals concentrations below the background concentrations established for the Naval Complex (Table 3). Metals concentrations for antimony, arsenic, barium, chromium, cobalt, copper, lead, nickel, selenium, vanadium, and zinc ranged from 1.06 mg/kg to 78.8

mg/kg. The detectable presence of VOCs, SVOCs, PCBs, TPH-g, TPH-d, and oil and grease were not identified at or above the laboratory reporting limits.

Analytical results from groundwater sample W-A indicated the following detectable concentrations: 12 mg/L of oil and grease and a pH of 7.80. Additionally, analytical results indicated the presence of metals, specifically arsenic, barium, chromium, copper, molybdenum, vanadium, and zinc at concentrations ranging from 0.010 mg/L to 0.144 mg/L. Metals concentrations were reported below the background concentrations established for the Naval Complex except for arsenic (Table 5). Arsenic was detected at a concentration of 0.023 mg/L in Table 5, just above the background value of 0.0185 mg/L. VOCs, SVOCs, PCBs, TPH-g, and TPH-d were not detected at or above the laboratory reporting limits.

Data Quality Review

This section summarizes the quality control (QC) activities performed as a part of this project. The analytical data were compared to the laboratory established acceptance criteria for the evaluation of precision, accuracy, representativeness, comparability, and completeness.

Soil, groundwater, sump sludge, sump fluid, and wood block samples were analyzed by Calscience Environmental Laboratories, Inc. of Garden Grove, California and reported in one Sample Delivery Group (SDG): 99-01-0064. The data tables in the report document the sample analytical results and include any data qualifiers added as a result of this data review (if any). Sample results are summarized on Tables 2 through 9.

The laboratory analyzed four soil, four groundwater, one sump sludge, one sump fluid, and two wood block samples for the analytical test methods summarized on Table 1. Because these are standard methods for the laboratory, there were control limits determined for surrogate, matrix spike, or laboratory control sample recoveries or duplicate relative percent differences (RPDs).

The analytical results were reviewed to determine the usability of the data for project decision making. The data were subjected to a review of the holding times, blank samples, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries and relative percent differences (RPDs), reporting limits, surrogate spike recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries, and field duplicate samples. Parameters of precision, accuracy, representativeness, comparability, and completeness were used to evaluate the analytical data. This data review found that the data were acceptable without qualification.

RECOMMENDATIONS

Based on the objectives and analytical results of this investigation, URSGWC recommends the following:

- The analytical results for the sludge, liquid, and wooden blocks should be transmitted to the demolition contractor for waste disposal consideration prior to site demolition activities. All materials should be disposed of in accordance with federal, state, and local regulations.
- The investigation results have adequately characterized the soil and groundwater conditions in the vicinity of the sumps at Building P-11 and Warehouse A and additional site assessment activities do not appear warranted at this time.

If you have any questions, please do not hesitate to call Brian Jacobs at (714) 835-6886.

Sincerely,

URS GREINER WOODWARD CLYDE

REGISTERED GEOLOGIST
BRIAN J. JACOBS
NO. 6652
EXP 6/00
STATE OF CALIFORNIA

Brian J. Jacobs
California Registered Geologist No. 6652
Job Task Manager

Ed Rogan, P.E.
Project Manager

Attachments

TABLE 1

SUMMARY OF ANALYTICAL TEST METHODS
LONG BEACH NAVAL SHIPYARD - BUILDING 50 / P-11 and WAREHOUSE A

Location	Sample Media	Analyte and EPA Test Method									
		VOCs 8260	SVOCs 8270	PCBs 8080	Metals 6000/7000	TPH-g 8015m	TPH-d 8015m	TPH-cc 8015m	O&G 413.1	pH 9045/150.1	Cyanide 9010
Buidling 50	Wood Block	X	X	X	X	X		X			X
Buidling P-11	Soil	X	X	X	X	X	X		X		
	Groundwater	X	X	X	X	X	X		X		
	Sump Liquid		X		X					X	
	Sump Sludge		X		X					X	
Warehouse A	Soil	X	X		X	X	X		X	X	X
	Groundwater	X	X		X	X	X		X	X	X

Notes: VOCs - Volatile Organic Compounds
SVOCs - Semi Volatile Organic Compounds
PCBs - Polychlorinated Biphenyls
TPH-g Total Petroleum Hydrocarbons as gasoline
TPH-d Total Petroleum Hydrocarbons as diesel
TPH-cc Total Petroleum Hydrocarbons with carbon chain breakout
O&G Oil and Grease

TABLE 2

ANALYTICAL RESULTS FOR SOIL AND SLUDGE SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING P-11 AND WAREHOUSE A
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	Oil & Grease 413.1 (mg/kg)	pH 9045B	Cyanide 9010A (mg/kg)	TPH-d 8015M (mg/kg)	TPH-g 8015M (mg/kg)	PCBs 8082 (ug/kg)	VOCs 8260B (ug/kg)	SVOCs 8270B (mg/kg)
Building P-11	P-11-3-5	3-5	1/6/99	Soil	ND	--	--	ND	ND	ND	ND	ND
	P-111-3-5 (dup)	3-5	1/6/99	Soil	ND	--	--	ND	ND	ND	ND	ND
	P-11-SUMP	Grab	1/6/99	Sludge	--	7.67	--	--	--	--	--	4.7(a)
Warehouse A	W-A-5-7	5-7	1/6/99	Soil	ND	6.07	ND	ND	ND	ND	ND	ND

NOTES: ND = not detected above the laboratory reporting limit
-- = not analyzed
bgs = below ground surface
dup = duplicate sample
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
TPH-d = Total Petroleum Hydrocarbons-diesel
TPH-g = Total Petroleum Hydrocarbons-gasoline
PCBs = Polychlorinated Biphenyls
VOCs = Volatile Organic Compounds
SVOCs = Semi Volatile Organic Compounds
(a) Bis(2-Ethylhexyl) Phthalate was detected at a concentration of 4.7 mg/kg. No other SVOCs were detected.

TABLE 3

ANALYTICAL RESULTS FOR SOIL AND SLUDGE SAMPLES
LONG BEACH NAVAL SHIPYARD- BUILDING P-11 AND WAREHOUSE A
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	TITLE 22 METALS - EPA METHOD 6010A															
				ANTIMONY (mg/kg)	ARSENIC (mg/kg)	BARIUM (mg/kg)	BERYLLIUM (mg/kg)	CADMIUM (mg/kg)	CHROMIUM (mg/kg)	COBALT (mg/kg)	COPPER (mg/kg)	LEAD (mg/kg)	MERCURY 7471A (mg/kg)	MOLYBDENUM (mg/kg)	NICKEL (mg/kg)	SELENIUM (mg/kg)	SILVER (mg/kg)	THALLIUM (mg/kg)	VANADIUM (mg/kg)	ZINC (mg/kg)
Bldg. P-11	P-11-3-5	3-5	1/6/99	1.10	4.59	74.8	ND	ND	12.9	6.93	8.91	1.89	ND	0.30	10.1	1.44	ND	ND	20.6	34.7
	P-111-3-5 (dup)	3-5	1/6/99	2.39	6.21	131	0.46	0.50	30.5	12.6	30.9	8.24	ND	0.90	22.8	2.53	ND	ND	40.6	74.6
	P-11-SUMP	Grab	1/6/99	22.5	5.77	139	ND	12.1/0.81[4]	157/ND[4]	9.65	634	292/6.39[4]	0.40	13.1	35.9	7.36	0.74	ND	11.3	1020
Warehouse A	W-A-5-7	5-7	1/6/99	1.06	1.75	78.8	ND	ND	14.9	8.04	11.9	2.20	ND	ND	11.7	1.41	ND	ND	24.4	40.8
	COMPARISON CONCENTRATION LEVELS (mg/kg)																			
	$U_{TL(95,95)}$ [1]			9.66	7.41	234.59	1.25	1.66	60.59	12.25	639.94	233.58	1.61	--	33.22	1.87	1.51	4.68	50.26	693.94
	TTLC[2]			500	500	10,000	75	100	2,500/500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
	STLC[3]			15	5	100	0.75	1	5	80	25	5	0.2	350	20	1	5	7	24	250

NOTES: ND = not detected above the laboratory reporting limit
-- = no value established for $U_{TL(95,95)}$
bgs = below ground surface
mg/kg = milligrams per kilogram
dup = duplicate sample
(1) Concentration ranges referenced from "Summary Statistics for Background Metal Concentrations in Soil, Naval Station Long Beach, CA".
UTL (95,95) = upper tolerance limit of the 95th quantile of the background metal distribution; confidence 95%.
(2) TTLC - Total Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.
(3) STLC -Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.
(4) TTLC/STLC results. STLC analyzed by the Waste Extraction Test method and reported in mg/L.

TABLE 4

ANALYTICAL RESULTS FOR GROUNDWATER AND SUMP FLUID SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING P-11 AND WAREHOUSE A
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	Oil & Grease 413.1 (mg/L)	pH 150.1	Cyanide 9010A (mg/L)	TPH-d 8015M (ug/L)	TPH-g 8015M (ug/L)	PCBs 8082 (ug/L)	VOCs 8260B (ug/L)	SVOCs 8270B (ug/L)
Building P-11	P-11	11-15	1/6/99	Water	4	--	--	ND	ND	ND	1.8 (a)	ND
	P-111 (dup)	11-15	1/6/99	Water	8	--	--	ND	ND	ND	1.0 (a)	ND
	P-11-SUMP	Grab	1/6/99	Fluid	--	6.02	--	--	--	--	--	ND
Warehouse A	W-A	10-14	1/6/99	Water	12	7.80	ND	ND	ND	--	ND	ND
Trip Blank	TB-0101	Grab	1/6/99	Water	--	--	--	--	--	--	ND	--
Equipment Blank	EB-1	Grab	1/6/99	Water	--	--	--	--	--	--	ND	--

NOTES:
ND = not detected above the laboratory reporting limit
-- = not analyzed
bgs = below ground surface
ug/L = micrograms per liter
mg/L = milligrams per liter
dup = duplicate sample
TPH-d = Total Petroleum Hydrocarbons-diesel
TPH-g = Total Petroleum Hydrocarbons-gasoline
PCBs = Polychlorinated Biphenyls
VOCs = Volatile Organic Compounds
SVOCs = Semi Volatile Organic Compounds
(a) methyl tert-butyl ether (MTBE) was detected at concentrations of 1.8 ug/L (P-11) and 1.0 ug/L (P-111). No other VOCs were detected.

TABLE 5

ANALYTICAL RESULTS FOR GROUNDWATER AND SUMP FLUID SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING P-11 AND WAREHOUSE A
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	TITLE 22 METALS - EPA METHOD 6010A															
				ANTIMONY (mg/L)	ARSENIC (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	MERCURY 7471A (mg/L)	MOLYBDENUM (mg/L)	NICKEL (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)
Bldg. P-11	P-11	11-15	1/6/99	ND	0.021	0.140	ND	ND	0.009	ND	0.015	ND	ND	0.008	ND	ND	ND	ND	0.007	0.062
	P-111 (dup)	11-15	1/6/99	ND	0.018	0.16	ND	ND	0.029	0.006	0.036	0.012	ND	0.009	0.014	ND	ND	ND	0.027	0.068
	P-11-SUMP	Fluid	1/6/99	0.054	0.028	0.381	ND	1.03	0.206	0.183	28.3	1.50	0.0039	ND	0.950	0.016	0.079	ND	0.035	40.3
Warehouse A	W-A	10-14	1/6/99	ND	0.023	0.144	ND	ND	0.010	ND	0.020	ND	ND	0.010	ND	ND	ND	ND	0.012	0.033
	COMPARISON CONCENTRATION LEVELS (mg/L)																			
	$U_{TL\ (95,95)}$ [1]			0.06488	0.01845	0.22270	0.00210	0.00216	0.28315	0.06457	0.10773	0.02232	0.00062	--	0.12189	0.01177	0.00624	0.00334	0.04005	0.28403
	TTLC [2]			500	500	10,000	75	100	2,500/500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
	STLC [3]			15	5	100	0.75	1	5	80	25	5	0.2	350	20	1	5	7	24	250

NOTES: ND = not detected above the laboratory reporting limit
-- = no value established for $U_{TL\ (95,95)}$
bgs = below ground surface
mg/L = milligrams per liter
dup = duplicate sample
(1) Concentration ranges referenced from "Summary Statistics for Background Metal Concentrations in Groundwater, Naval Station Long Beach, CA".
UTL (95,95) = upper tolerance limit of the 95th quantile of the background metal distribution; confidence 95%.
(2) TTLC - Total Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.
(3) STLC -Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.

TABLE 6

ANALYTICAL RESULTS FOR WOOD BLOCK SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING 50
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	SVOCs 8270C (mg/kg)							
					Phenol	4-Methyl Phenol	2,4-Dimethyl Phenol	Naphthalene	2-Methyl Naphthalene	1-Methyl Naphthalene	Acenaphthylene	Acenaphthene
Building 50	WB-1	Surface	1/6/99	Wood	ND	ND	ND	1820	310	150	ND	490
	WB-2	Surface	1/6/99	Wood	110	120	60	490	250	140	130	260

(Continued from above table)

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	SVOCs 8270C (mg/kg) (Continued)								
					Dibenzofuran	Flourene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a) Anthracene	Chrysene	Benzo(b) Fluoranthene
Building 50	WB-1	Surface	1/6/99	Wood	310	300	2430	590	2070	500	510	460	560
	WB-2	Surface	1/6/99	Wood	730	240	2970	820	2120	2430	990	1180	480

NOTES: ND = not detected above the laboratory reporting limit
bgs = below ground surface
mg/kg = milligrams per kilogram
SVOCs = Semi Volatile Organic Compounds
No other SVOCs were detected.

TABLE 7

ANALYTICAL RESULTS FOR WOOD BLOCK SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING 50
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	TPH-g 8015M (mg/kg)	Cyanide 9010A (mg/kg)	PCBs Aroclor-1260 8082 (mg/kg)	VOCs 8260B (mg/kg)				
								Acetone	p-isopropyl-toluene	4-Methyl 2-Pentanone	Naphthalene	Toluene
Building 50	WB-1	Surface	1/6/99	Wood	1430	ND	8.680	57.2	0.160	1.030	4.940	0.200
	WB-2	Surface	1/6/99	Wood	9.9	ND	ND	ND	ND	ND	2.740	ND

NOTES:
ND = not detected above the laboratory reporting limit
bgs = below ground surface
mg/kg = milligrams per kilogram
TPH-g = Total Petroleum Hydrocarbons-gasoline
PCBs = Polychlorinated Biphenyls
VOCs = Volatile Organic Compounds

TABLE 8

ANALYTICAL RESULTS OF WOOD BLOCK SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING 50
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	Media	Carbon Chain Distribution - EPA 8015 modified												
					C7-C8 (mg/kg)	C9-C10 (mg/kg)	C11-C12 (mg/kg)	C13-C14 (mg/kg)	C15-C16 (mg/kg)	C17-C18 (mg/kg)	C19-C20 (mg/kg)	C21-C22 (mg/kg)	C23-C24 (mg/kg)	C25-C28 (mg/kg)	C29-C32 (mg/kg)	C33-C36 (mg/kg)	Total (mg/kg)
Building 50	WB-1	Surface	1/6/99	Wood	ND	60	53	ND	100	231	194	393	363	1160	1300	949	4803
	WB-2	Surface	1/6/99	Wood	ND	ND	ND	53	258	883	595	1150	394	1260	1340	1140	7073

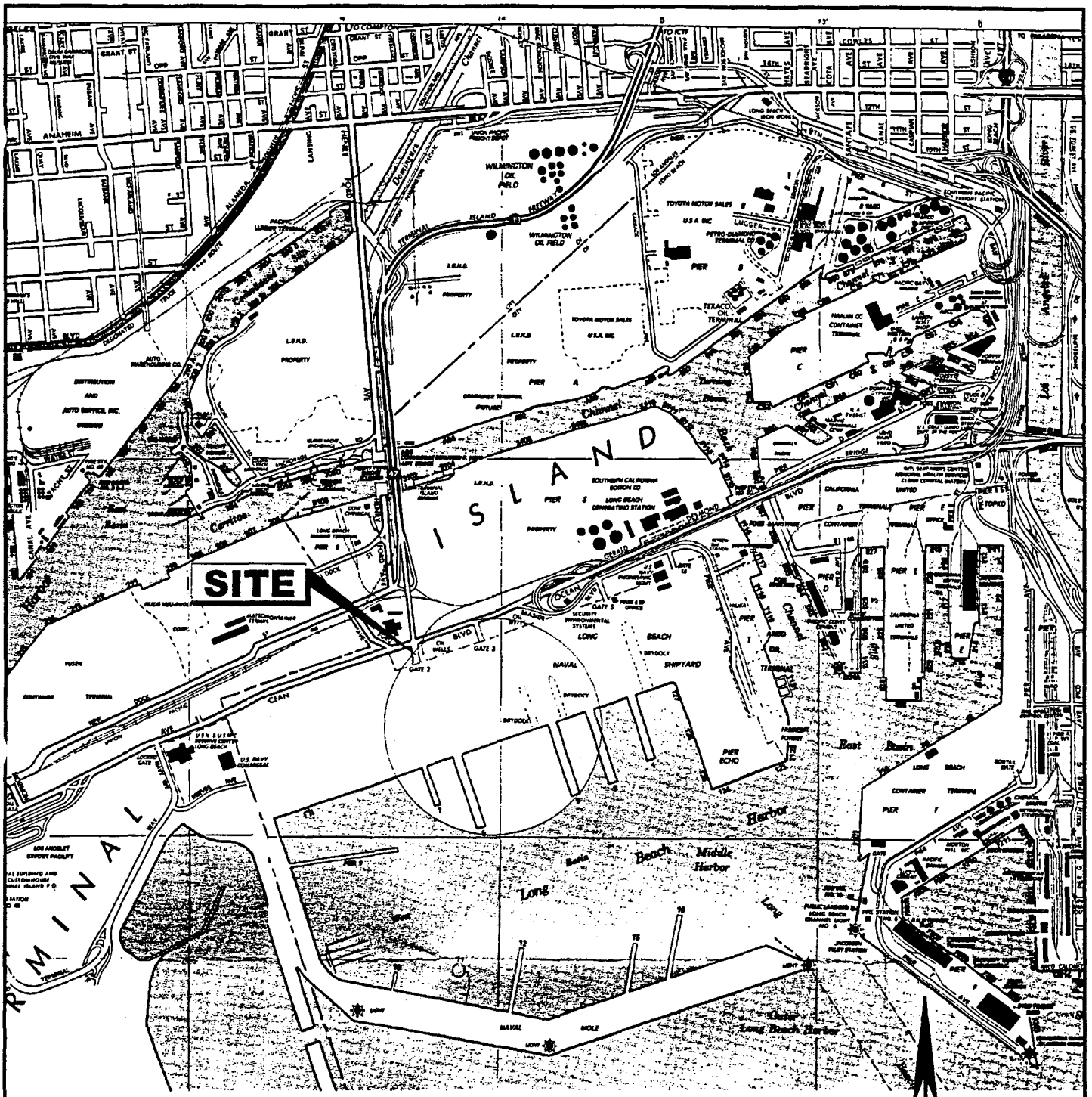
NOTES: ND = not detected above the laboratory reporting limit
bgs = below ground surface
mg/kg = milligrams per kilogram
C7-C8 indicates Carbon 7 to Carbon 8.

TABLE 9

ANALYTICAL RESULTS FOR WOOD BLOCK SAMPLES
LONG BEACH NAVAL SHIPYARD - BUILDING 50
JANUARY 6, 1999

Area	Sample ID	Sample Depth (feet bgs)	Sample Date	TITLE 22 METALS - EPA METHOD 6010A															
				ANTIMONY (mg/kg)	ARSENIC (mg/kg)	BARIUM (mg/kg)	BERYLLIUM (mg/kg)	CADMIUM (mg/kg)	CHROMIUM (mg/kg)	COBALT (mg/kg)	COPPER (mg/kg)	LEAD (mg/kg)	MERCURY 7471A (mg/kg)	MOLYBDENUM (mg/kg)	NICKEL (mg/kg)	SELENIUM (mg/kg)	SILVER (mg/kg)	THALLIUM (mg/kg)	VANADIUM (mg/kg)	ZINC (mg/kg)
Building 50	WB-1	Surface	1/6/99	2.48	0.78	18.0	ND	0.86	2.29	ND	22.8	61.5	ND	ND	1.96	0.61	ND	ND	0.85	91.3
	WB-2	Surface	1/6/99	2.17	1.09	7.21	ND	ND	0.72	ND	4.54	10.7	ND	ND	0.36	0.96	1.01	ND	ND	23.8
	COMPARISON CONCENTRATION LEVELS (mg/kg)																			
	TTLC[1]			500	500	10,000	75	100	2,500/500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
	STLC[2]			15	5	100	0.75	1	5	80	25	5	0.2	350	20	1	5	7	24	250

NOTES: ND = not detected above the laboratory reporting limit
bgs = below ground surface
mg/kg = milligrams per kilogram
(1) TTLC - Total Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.
(2) STLC -Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Section 66261.24, February 16, 1996.



Source: Base map taken from Automobile Club of Southern California. Travel Publications Department. Copyright 1997.

SITE LOCATION MAP

Project No.: 57974W010X00	Date: JANUARY 1999	Project: POLB - NAVAL SHIPYARD	Fig. 1

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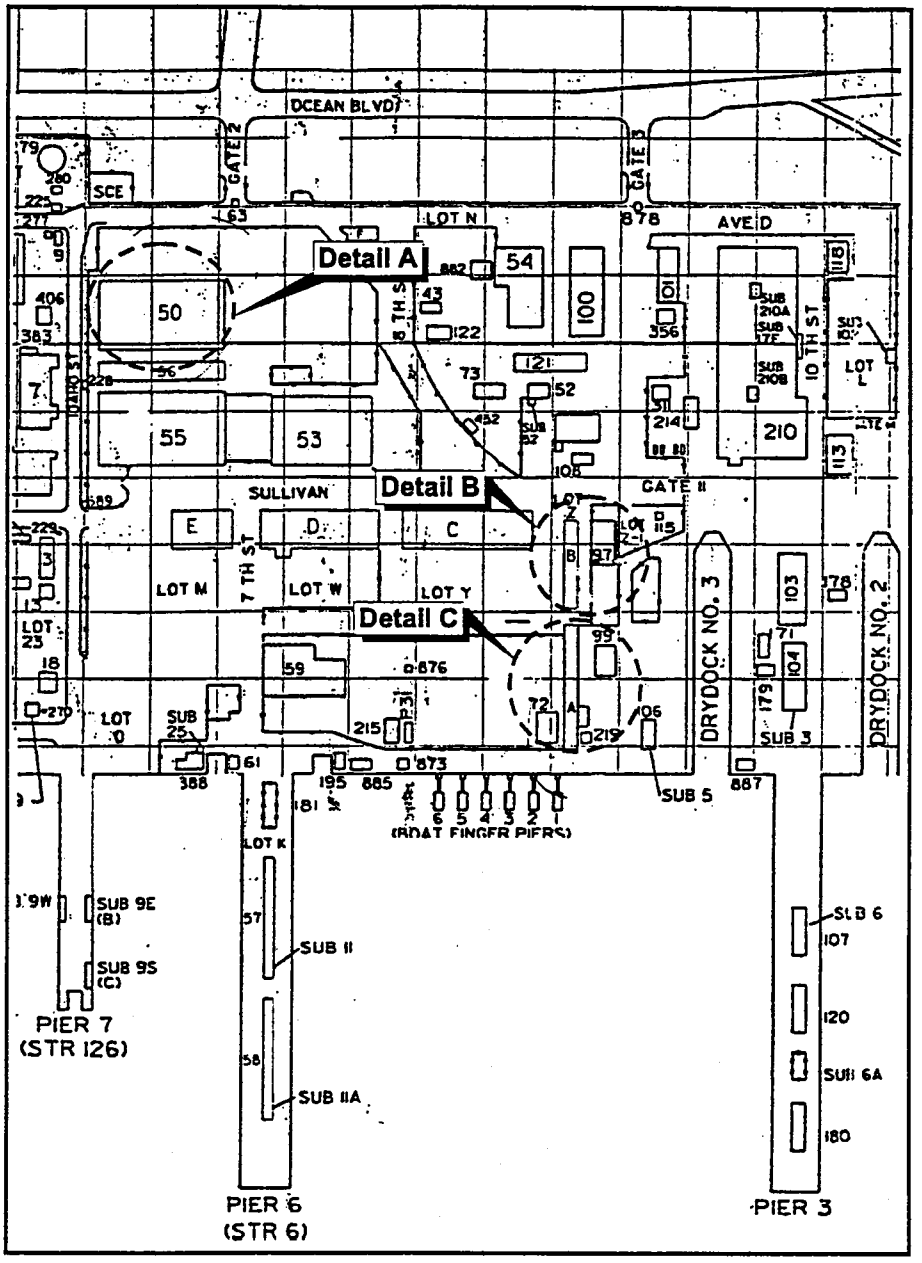

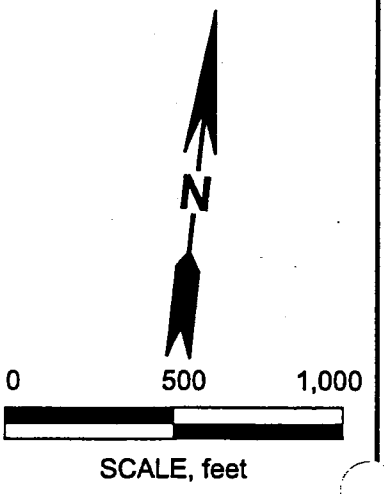

Source: Base map taken from Long Beach Naval Shipyard Report.
P.W. Drawing No. 5536, Sheet 1 Of 1.
Titled: Terminal Island U.s. Naval Facilities.

SITE PLAN

Project No.: 57974W010X00	Date: JANUARY 1999	Project: POLB - NAVAL SHIPYARD	Fig. 2

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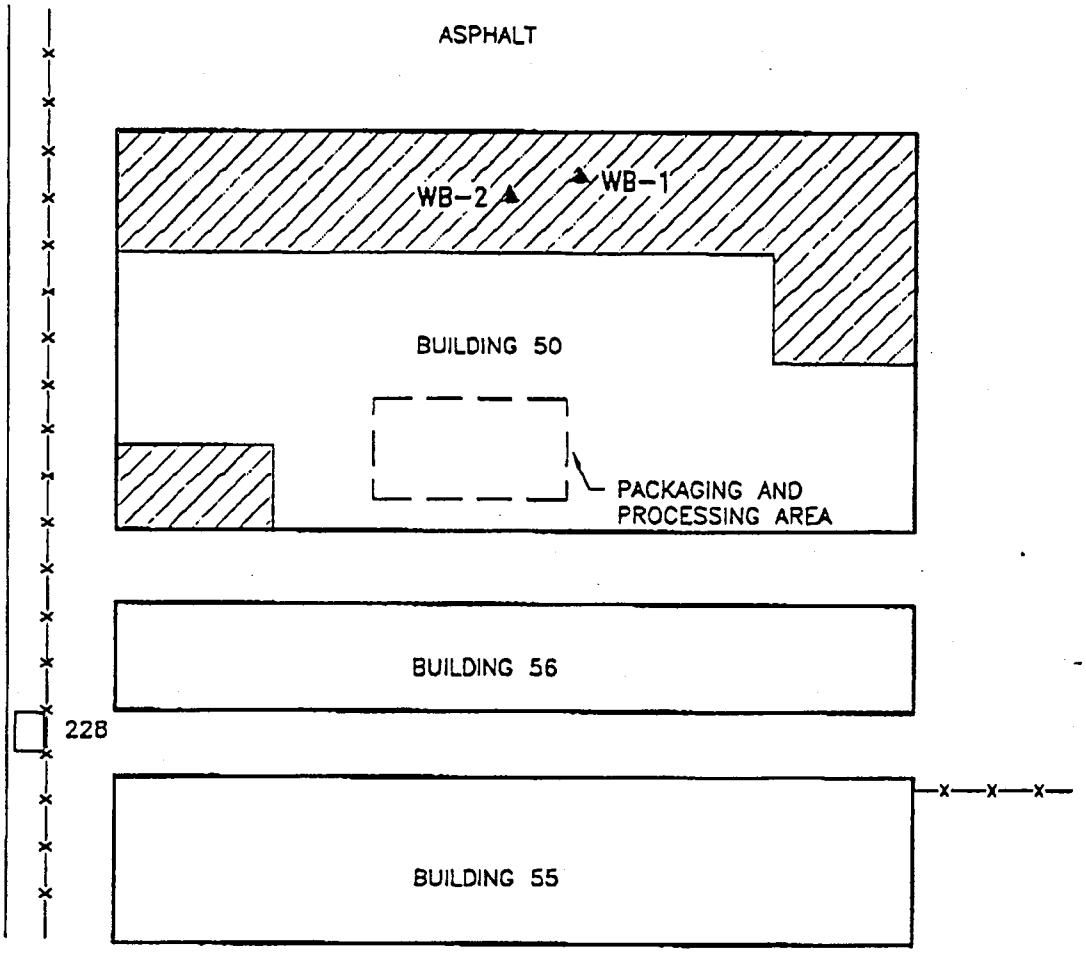

LEGEND

WOOD BLOCK FLOORS (APPROXIMATE LOCATION)

CHAIN LINK FENCE

WB-1 ▲ WOOD BLOCK FLOOR SAMPLING LOCATION AND DESIGNATION

0 100 200

SCALE, feet

DETAIL A - WOOD BLOCK FLOOR SAMPLING LOCATIONS, BUILDING 50

Project No.:	Date:	Project:	Fig.
974W010X	JAN. 1999	POLB-NAVAL SHIPYARD	3

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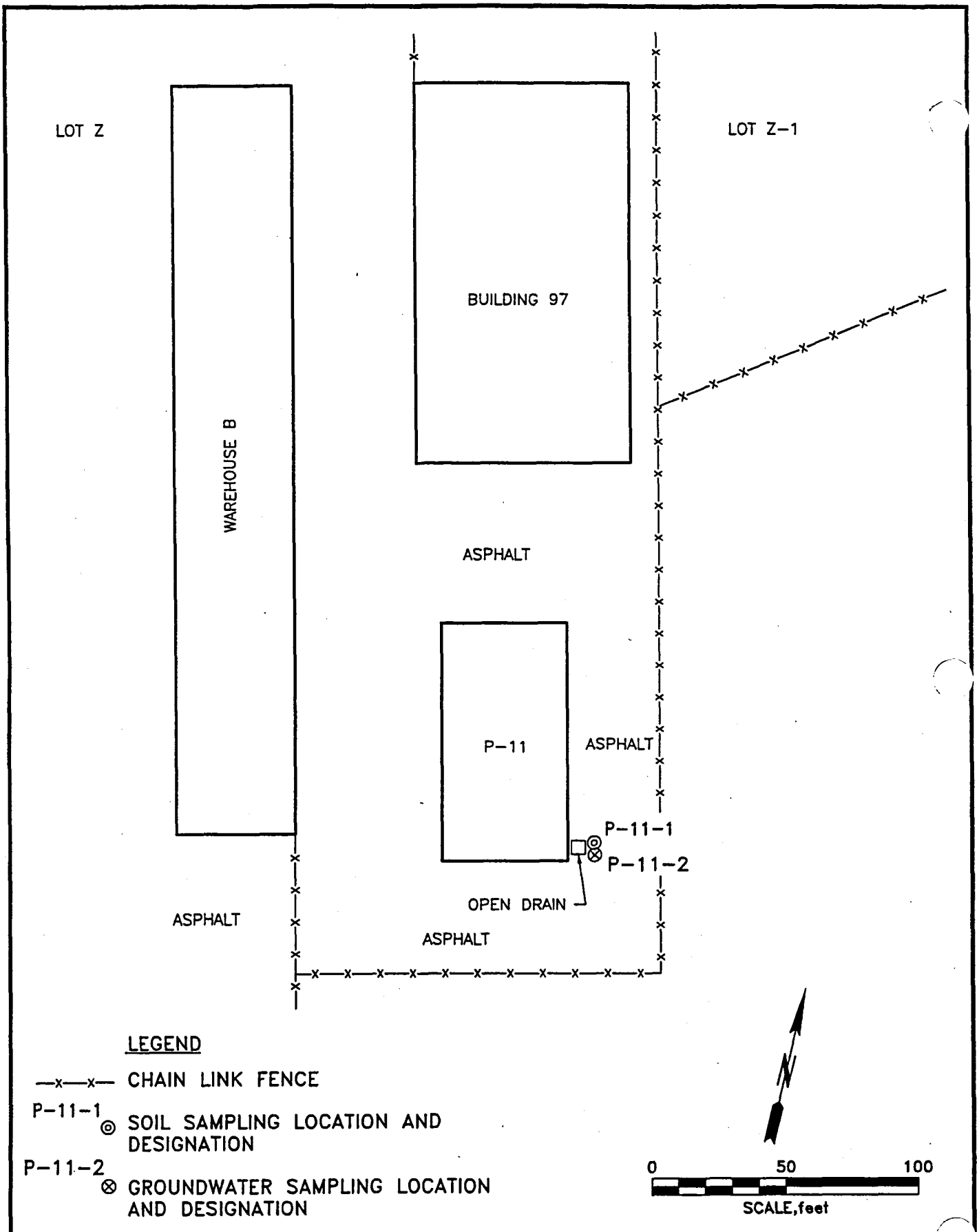

DETAIL B - SOIL/GROUNDWATER SAMPLING LOCATIONS, FLOOR DRAIN AT BUILDING P-11

Project No.:	974W010X	Date:	JAN. 1999	Project:	POLB-NAVAL SHIPYARD	Fig.	4

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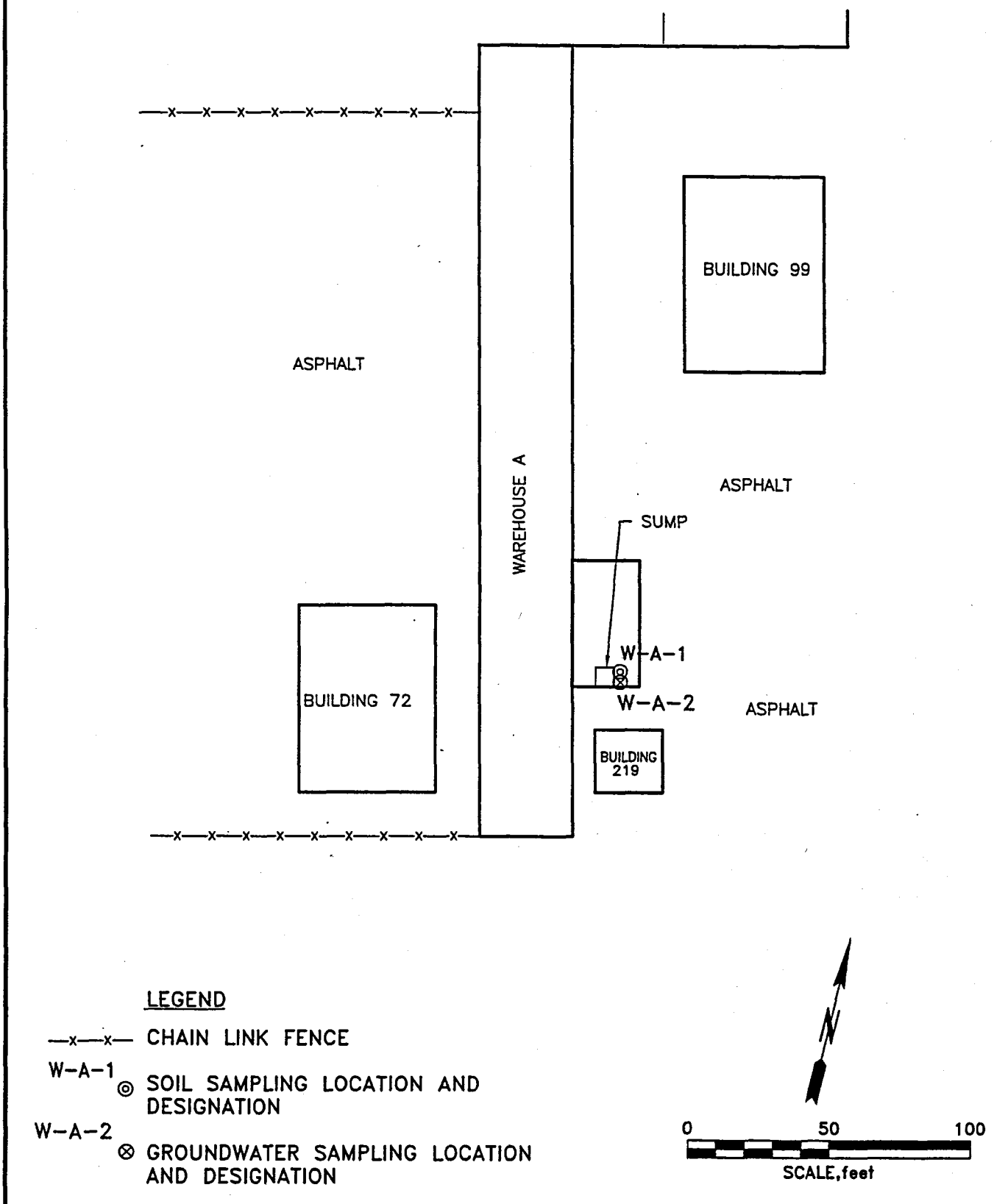
URS Greiner Woodward Clyde



DETAIL C - SOIL/GROUNDWATER SAMPLING LOCATIONS, SUMP AT WAREHOUSE A

Project No.:	Date:	Project:	Fig.
974W010X	JAN. 1999	POLB–NAVAL SHIPYARD	5

MS I:\97\974W010\DETL-C.dwg R14.01 01/21/99 07:44

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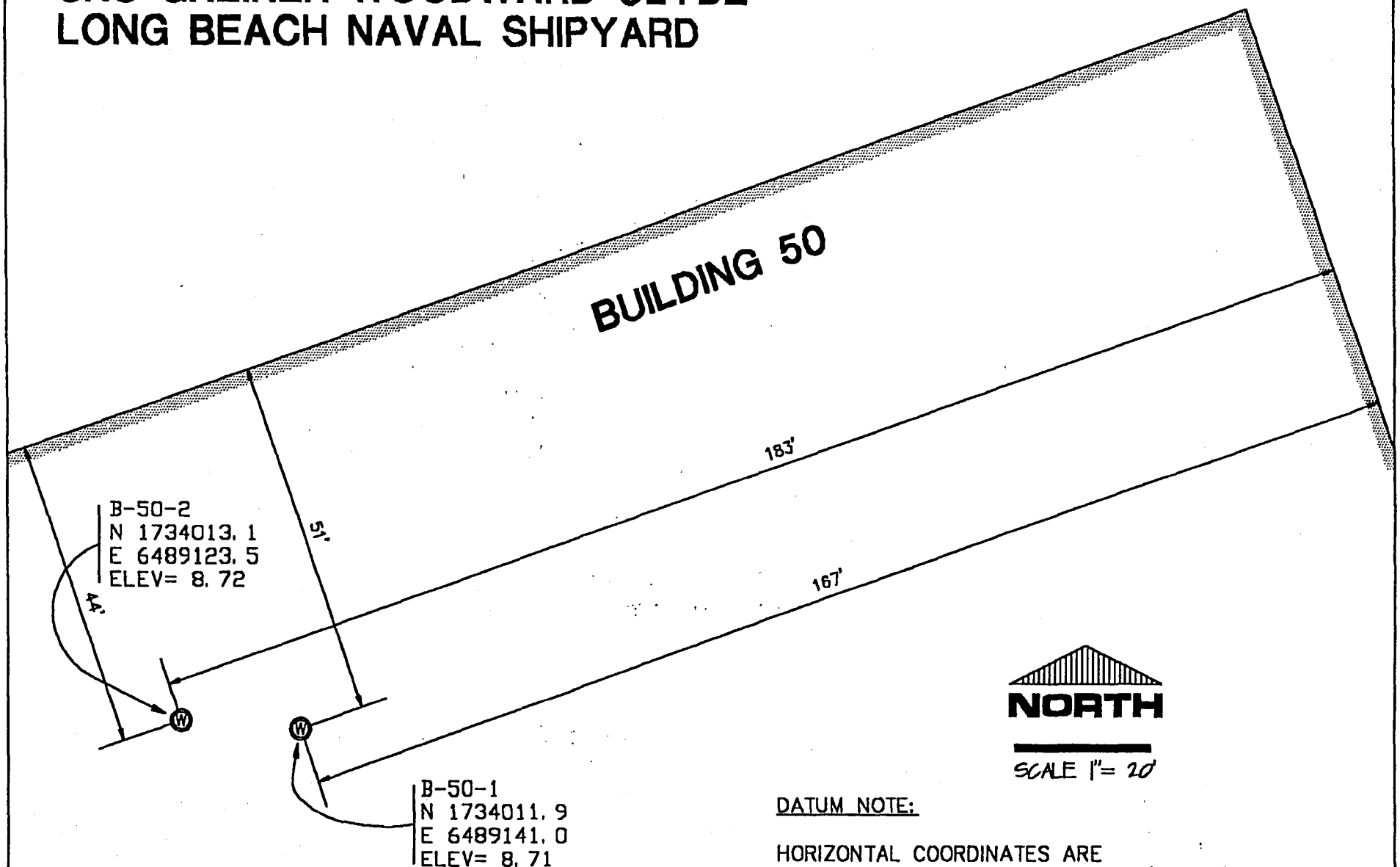
ATTACHMENT A

SURVEY RESULTS

URS GREINER WOODWARD CLYDE
LONG BEACH NAVAL SHIPYARD



DATUM NOTE:

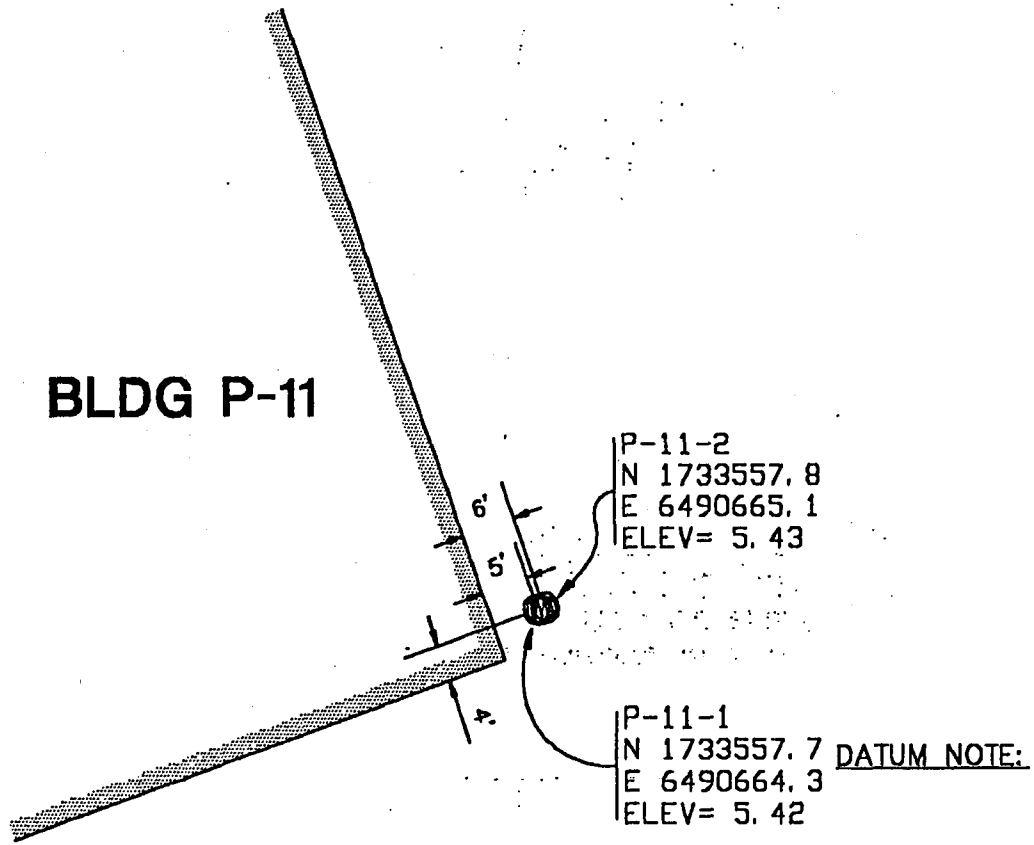
HORIZONTAL COORDINATES ARE
CALIFORNIA STATE PLANE ZONE V (NAD83)
VERTICAL DATUM IS REFERENCED TO PORT
OF LONG BEACH BENCHMARKS ON MLLW

DATE OF SURVEY: 12 JAN 99

DULIN & BOYNTON
LICENSED SURVEYORS
729 E. WILLOW STREET ● (562)426-6484 FAX(562)426-7707 ● SIGNAL HILL, CA. 90806

Woodward-Clyde
Dulin and Boynton: Doug Boynton
562.426.7707
562.426.6484
01/14/99 08:35

URS GREINER WOODWARD CLYDE
LONG BEACH NAVAL SHIPYARD



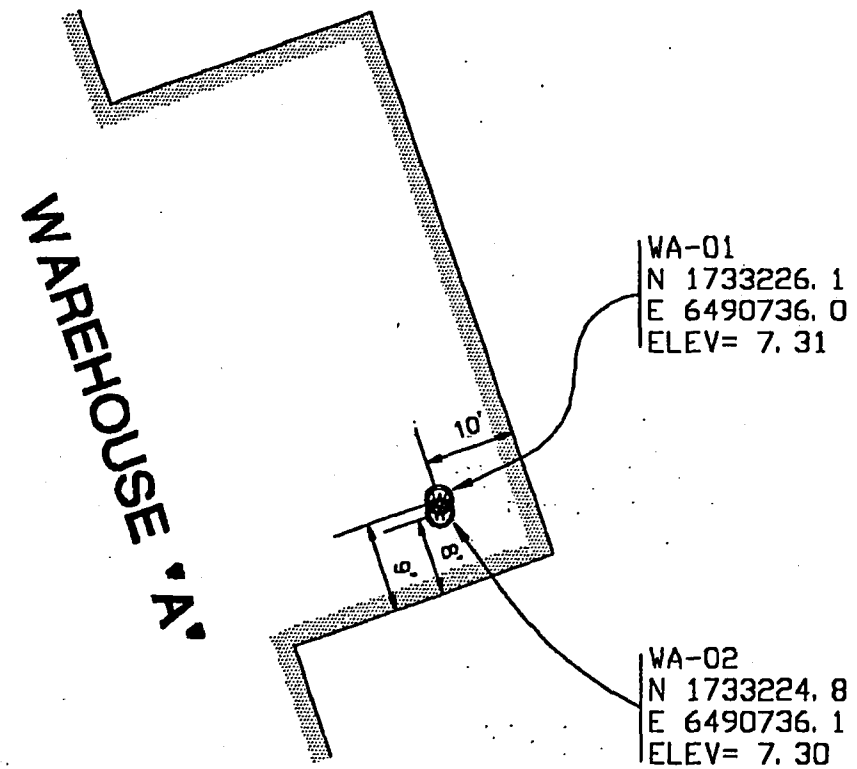
HORIZONTAL COORDINATES ARE
CALIFORNIA STATE PLANE ZONE V (NAD83)
VERTICAL DATUM IS REFERENCED TO PORT
OF LONG BEACH BENCHMARKS ON MLLW

DATE OF SURVEY: 12 JAN 99

DULIN & BOYNTON
LICENSED SURVEYORS
729 E. WILLOW STREET ● (562)426-6464 FAX(562)426-7707 ● SIGNAL HILL, CA. 90806

3 of 4
Woodward-Clyde
Dulin and Boynton: Doug Boynton
562.426.6464 562.426.7707
01/14/99 08:35

URS GREINER WOODWARD CLYDE
LONG BEACH NAVAL SHIPYARD



WA-01
N 1733226.1
E 6490736.0
ELEV= 7.31

WA-02
N 1733224.8
E 6490736.1
ELEV= 7.30

NORTH

SCALE 1"= 20'

DATUM NOTE:

HORIZONTAL COORDINATES ARE
CALIFORNIA STATE PLANE ZONE V (NAD83)
VERTICAL DATUM IS REFERENCED TO PORT
OF LONG BEACH BENCHMARKS ON MLLW

DATE OF SURVEY: 12 JAN 99

DULIN & BOYNTON
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Woodward-Clyde
Dulin and Boynton: Doug Boynton
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01/14/99 08:36

ATTACHMENT B

FIELD SAMPLING PROCEDURES

This section summarizes the field procedures utilized for soil, groundwater, and sludge sample collection. In addition, information regarding decontamination and investigation derived waste are also discussed.

Soil Sampling Procedures

Soil samples were collected using a direct-push method. A sampler containing three clean, stainless steel sleeves was hydraulically advanced to the appropriate sampling depth intervals. The soil from the top sleeve was placed into a sealable plastic bag and allowed to equilibrate for at least 10 minutes. The organic vapor levels in the headspace were then measured using an organic vapor analyzer (OVA). The middle sleeve was used as a duplicate sample, if needed, and the bottom sleeve was used as the field sample. Field and duplicate samples collected for chemical analysis were sealed on each end with clean Teflon® sheets, capped with polyvinyl chloride (PVC) end caps, labeled, placed in sealable plastic bags, and stored in an ice-filled cooler pending transportation to a state-certified analytical laboratory. The samples were transported under chain-of-custody in order to maintain the traceability of the samples from the time the samples are collected until laboratory data are issued.

Groundwater Sampling Procedures

Groundwater samples were collected from temporary well points using the Hydropunch® sampling technique. The Hydropunch® temporary well points consist of a cone-shaped drive tip, approximately four feet of retractable stainless steel, slotted well screen, and 1.5-inch diameter drive rod. The well screen is housed inside a steel drive casing during installation on the well point. When the desired depth was reached, the well casing was retracted exposing the screen interval. After groundwater entered the wellpoint, the well was purged with a bailer and sampled. Groundwater samples were collected in containers provided by the analytical laboratory, labeled, placed in sealable plastic bags, and stored in an ice-filled cooler pending transportation to a state-certified analytical laboratory. The samples were transported under chain-of-custody in order to maintain the traceability of the samples from the time the samples are collected until laboratory data are issued.

Drain Sampling Procedures

The contents of the drain at Building P-11 were collected using the grab sampling method. Sample containers provided by the analytical laboratory were lowered into the drain to collect samples of the liquid and sludge. Following the collection of these samples, the containers were labeled, placed in sealable plastic bags, and stored in an ice-filled cooler pending transportation to a state-certified analytical laboratory. The samples were transported under chain-of-custody in order to maintain the traceability of the samples from the time the samples are collected until laboratory data are issued.

Equipment Decontamination Procedures

The field decontamination process for soil and groundwater sampling equipment consisted of wiping the equipment of excess soil, washing in a solution of non-phosphate detergent (Liquinox), rinsing with de-ionized water, and drying with a paper towel. The equipment was cleaned prior to use, between use, and prior to leaving the site.

Disposal of Investigation-Derived Waste

Investigation-derived waste (decontamination water and purge water) was containerized in a 55-gallon drum. The drum was properly sealed, labeled, and temporarily stored to the northeast of Building P-11. Disposal of the investigation-derived waste will be determined based on the analytical results of the samples collected during the site investigation.

ATTACHMENT C

LABORATORY DATA SHEETS AND CHAIN OF CUSTODY FORMS

Calscience Environmental Laboratories, Inc.

January 15, 1999

Brian Jacobs
Woodward-Clyde Consultants
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Subject: **Calscience Work Order Number: 99-01-0064**
Client Reference: POLB-Naval Shipyard

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 01/06/99 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested, and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Marycarol Valenzuela
Project Manager

William H. Christensen
Quality Assurance Manager

CAlSCIENCE
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Analyzed:	01/12/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 9010A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/kg (ppm).

Sample Number	Total Cyanide Concentration	Reporting Limit
WB-1	ND	0.5
WB-2	ND	0.5
Method Blank	ND	0.5

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	01/08/99
	Date Analyzed:	01/09/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard		

All concentrations are reported in mg/kg (ppm).

Analyte	Concentration	Reporting Limit
Sample Number: WB-2		
C7	ND	50
C8	ND	50
C9-C10	ND	50
C11-C12	ND	50
C13-C14	53	50
C15-C16	258	50
C17-C18	883	50
C19-C20	595	50
C21-C22	1150	50
C23-C24	394	50
C25-C28	1260	50
C29-C32	1340	50
C33-C36	1140	50

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	01/08/99
	Date Analyzed:	01/09/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard	Page 1 of 3	

All concentrations are reported in mg/kg (ppm).

Analyte	Concentration	Reporting Limit
Sample Number: WB-1		
C7	ND	50
C8	ND	50
C9-C10	60	50
C11-C12	53	50
C13-C14	ND	50
C15-C16	100	50
C17-C18	231	50
C19-C20	194	50
C21-C22	393	50
C23-C24	363	50
C25-C28	1160	50
C29-C32	1300	50
C33-C36	949	50

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ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	01/08/99
	Date Analyzed:	01/08/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard	Page 3 of 3	

All concentrations are reported in mg/kg (ppm).

Analyte	Concentration	Reporting Limit
Sample Number: Method Blank		
C7	ND	5
C8	ND	5
C9-C10	ND	5
C11-C12	ND	5
C13-C14	ND	5
C15-C16	ND	5
C17-C18	ND	5
C19-C20	ND	5
C21-C22	ND	5
C23-C24	ND	5
C25-C28	ND	5
C29-C32	ND	5
C33-C36	ND	5

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Digested:	01/11/99
	Date Analyzed:	01/12/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 7471A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/kg (ppm). Analyses for Mercury were conducted on a total digestion.

Sample Number	Mercury Concentration	Reporting Limit
WB-1	ND	0.25
WB-2	ND	0.25
Method Blank	ND	0.25

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111lcs1	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/11/99
Method:	EPA 6010B	Date Analyzed:	01/12/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
Antimony	2.48	0.75		mg/kg
Arsenic	0.76	0.75		mg/kg
Barium	16.0	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	0.86	0.50		mg/kg
Chromium (Total)	2.29	0.25		mg/kg
Cobalt	ND	0.25		mg/kg
Copper	22.8	0.25		mg/kg
Lead	51.5	0.50		mg/kg
Molybdenum	ND	0.25		mg/kg
Nickel	1.96	0.25		mg/kg
Selenium	0.81	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	0.85	0.25		mg/kg
Zinc	91.3	1.00		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111lcs1	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/11/99
Method:	EPA 6010B	Date Analyzed:	01/12/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
Antimony	2.17	0.75		mg/kg
Arsenic	1.09	0.75	3	mg/kg
Barium	7.21	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	ND	0.50		mg/kg
Chromium (Total)	0.72	0.25	3	mg/kg
Cobalt	ND	0.25		mg/kg
Copper	4.54	0.25	3	mg/kg
Lead	10.7	0.50	3	mg/kg
Molybdenum	ND	0.25		mg/kg
Nickel	0.36	0.25	3	mg/kg
Selenium	0.96	0.75		mg/kg
Silver	1.01	0.50	3	mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	ND	0.25		mg/kg
Zinc	23.8	1.00		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111lcs1	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	Total Digestion	Date Prepared:	01/11/99
Method:	EPA 6010B	Date Analyzed:	01/12/99

Client Sample Number: **Method Blank**
Lab Sample Number: 097-01-002-832

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.75		mg/kg
Arsenic	ND	0.75		mg/kg
Barium	ND	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	ND	0.50		mg/kg
Chromium (Total)	ND	0.25		mg/kg
Cobalt	ND	0.25		mg/kg
Copper	ND	0.25		mg/kg
Lead	ND	0.50		mg/kg
Molybdenum	ND	0.25		mg/kg
Nickel	ND	0.25		mg/kg
Selenium	ND	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	ND	0.25		mg/kg
Zinc	ND	1.00		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8015M TPH-Gasoline Standard

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	99011302sa	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Ext. + EPA 5030	Date Prepared:	01/13/99
Method:	EPA 8015M	Date Analyzed:	01/13/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
TPH for Gasoline	1430	50	D	mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	104	45-141	

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ANALYTICAL REPORT
EPA 8015M TPH-Gasoline Standard

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	99011201sa	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 5030A	Date Prepared:	N/A
Method:	EPA 8015M	Date Analyzed:	01/13/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
TPH for Gasoline	9.9	0.5		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	13	45-141	2

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ANALYTICAL REPORT
EPA 8015M TPH-Gasoline Standard

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	99011201sa	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 5030A	Date Prepared:	N/A
Method:	EPA 8015M	Date Analyzed:	01/12/99

Client Sample Number: **Method Blank**
Lab Sample Number: 098-03-008-159

Parameter	Result	RL	Qualifiers	Units
TPH for Gasoline	ND	0.5		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	111	45-141	

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ANALYTICAL REPORT

EPA 8015M TPH-Gasoline Standard

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	99011302sa	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	Ext. + EPA 5030	Date Prepared:	01/13/99
Method:	EPA 8015M	Date Analyzed:	01/13/99

Client Sample Number: **Method Blank**
Lab Sample Number: 098-03-008-162

Parameter	Result	RL	Qualifiers	Units
TPH for Gasoline	ND	5		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	45-141	

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ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901081	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/08/99
Method:	EPA 8082	Date Analyzed:	01/11/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	500		ug/kg
Aroclor-1221	ND	500		ug/kg
Aroclor-1232	ND	500		ug/kg
Aroclor-1242	ND	500		ug/kg
Aroclor-1248	ND	500		ug/kg
Aroclor-1254	ND	500		ug/kg
Aroclor-1260	8680	500	D	ug/kg
Aroclor-1262	ND	500		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	129	50-130	
2,4,5,6-Tetrachloro-m-Xylene	86	50-130	

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ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901081	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/08/99
Method:	EPA 8082	Date Analyzed:	01/11/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	500		ug/kg
Aroclor-1221	ND	500		ug/kg
Aroclor-1232	ND	500		ug/kg
Aroclor-1242	ND	500		ug/kg
Aroclor-1248	ND	500		ug/kg
Aroclor-1254	ND	500		ug/kg
Aroclor-1260	ND	500		ug/kg
Aroclor-1262	ND	500		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	86	50-130	
2,4,5,6-Tetrachloro-m-Xylene	44	50-130	2

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ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901081	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3550A	Date Prepared:	01/08/99
Method:	EPA 8082	Date Analyzed:	01/08/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-014-1,134

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	66	50-130	
2,4,5,6-Tetrachloro-m-Xylene	76	50-130	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
Acetone	57200	10000	D	ug/kg
Benzene	ND	100		ug/kg
Bromobenzene	ND	100		ug/kg
Bromochloromethane	ND	100		ug/kg
Bromodichloromethane	ND	100		ug/kg
Bromoform	ND	100		ug/kg
Bromomethane	ND	100		ug/kg
2-Butanone	ND	1000		ug/kg
n-Butylbenzene	ND	100		ug/kg
sec-Butylbenzene	ND	100		ug/kg
tert-Butylbenzene	ND	100		ug/kg
Carbon Disulfide	ND	1000		ug/kg
Carbon Tetrachloride	ND	100		ug/kg
Chlorobenzene	ND	100		ug/kg
Chloroethane	ND	100		ug/kg
Chloroform	ND	100		ug/kg
Chloromethane	ND	100		ug/kg
2-Chlorotoluene	ND	100		ug/kg
4-Chlorotoluene	ND	100		ug/kg
Dibromochloromethane	ND	100		ug/kg
1,2-Dibromo-3-Chloropropane	ND	100		ug/kg
1,2-Dibromoethane	ND	100		ug/kg
Dibromomethane	ND	100		ug/kg
1,2-Dichlorobenzene	ND	100		ug/kg
1,3-Dichlorobenzene	ND	100		ug/kg
1,4-Dichlorobenzene	ND	100		ug/kg
Dichlorodifluoromethane	ND	100		ug/kg
1,1-Dichloroethane	ND	100		ug/kg
1,2-Dichloroethane	ND	100		ug/kg
1,1-Dichloroethene	ND	100		ug/kg
c-1,2-Dichloroethene	ND	100		ug/kg
t-1,2-Dichloroethene	ND	100		ug/kg
1,2-Dichloropropane	ND	100		ug/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	1000		ug/kg
Benzene	ND	100		ug/kg
Bromobenzene	ND	100		ug/kg
Bromochloromethane	ND	100		ug/kg
Bromodichloromethane	ND	100		ug/kg
Bromoform	ND	100		ug/kg
Bromomethane	ND	100		ug/kg
2-Butanone	ND	1000		ug/kg
n-Butylbenzene	ND	100		ug/kg
sec-Butylbenzene	ND	100		ug/kg
tert-Butylbenzene	ND	100		ug/kg
Carbon Disulfide	ND	1000		ug/kg
Carbon Tetrachloride	ND	100		ug/kg
Chlorobenzene	ND	100		ug/kg
Chloroethane	ND	100		ug/kg
Chloroform	ND	100		ug/kg
Chloromethane	ND	100		ug/kg
2-Chlorotoluene	ND	100		ug/kg
4-Chlorotoluene	ND	100		ug/kg
Dibromochloromethane	ND	100		ug/kg
1,2-Dibromo-3-Chloropropane	ND	100		ug/kg
1,2-Dibromoethane	ND	100		ug/kg
Dibromomethane	ND	100		ug/kg
1,2-Dichlorobenzene	ND	100		ug/kg
1,3-Dichlorobenzene	ND	100		ug/kg
1,4-Dichlorobenzene	ND	100		ug/kg
Dichlorodifluoromethane	ND	100		ug/kg
1,1-Dichloroethane	ND	100		ug/kg
1,2-Dichloroethane	ND	100		ug/kg
1,1-Dichloroethene	ND	100		ug/kg
c-1,2-Dichloroethene	ND	100		ug/kg
t-1,2-Dichloroethene	ND	100		ug/kg
1,2-Dichloropropane	ND	100		ug/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	100		ug/kg
2,2-Dichloropropane	ND	100		ug/kg
1,1-Dichloropropene	ND	100		ug/kg
c-1,3-Dichloropropene	ND	100		ug/kg
t-1,3-Dichloropropene	ND	100		ug/kg
Ethylbenzene	ND	100		ug/kg
2-Hexanone	ND	1000		ug/kg
Isopropylbenzene	ND	100		ug/kg
p-Isopropyltoluene	ND	100		ug/kg
Methylene Chloride	ND	1000		ug/kg
4-Methyl-2-Pentanone	ND	1000		ug/kg
Naphthalene	2740	1000		ug/kg
n-Propylbenzene	ND	100		ug/kg
Styrene	ND	100		ug/kg
1,1,1,2-Tetrachloroethane	ND	100		ug/kg
1,1,2,2-Tetrachloroethane	ND	100		ug/kg
Tetrachloroethene	ND	100		ug/kg
Toluene	ND	100		ug/kg
1,2,3-Trichlorobenzene	ND	200		ug/kg
1,2,4-Trichlorobenzene	ND	100		ug/kg
1,1,1-Trichloroethane	ND	100		ug/kg
1,1,2-Trichloroethane	ND	100		ug/kg
Trichloroethene	ND	100		ug/kg
Trichlorofluoromethane	ND	1000		ug/kg
1,2,3-Trichloropropane	ND	100		ug/kg
1,2,4-Trimethylbenzene	ND	100		ug/kg
1,3,5-Trimethylbenzene	ND	100		ug/kg
Vinyl Acetate	ND	1000		ug/kg
Vinyl Chloride	ND	100		ug/kg
p/m-Xylene	ND	100		ug/kg
o-Xylene	ND	100		ug/kg
Methyl-tert-Butyl Ether	ND	100		ug/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	80-120	
Toluene-d8	101	81-117	
1,4-Bromofluorobenzene	100	74-121	

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,084

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	500		ug/kg
Benzene	ND	50		ug/kg
Bromobenzene	ND	50		ug/kg
Bromochloromethane	ND	50		ug/kg
Bromodichloromethane	ND	50		ug/kg
Bromoform	ND	50		ug/kg
Bromomethane	ND	50		ug/kg
2-Butanone	ND	500		ug/kg
n-Butylbenzene	ND	50		ug/kg
sec-Butylbenzene	ND	50		ug/kg
tert-Butylbenzene	ND	50		ug/kg
Carbon Disulfide	ND	500		ug/kg
Carbon Tetrachloride	ND	50		ug/kg
Chlorobenzene	ND	50		ug/kg
Chloroethane	ND	50		ug/kg
Chloroform	ND	50		ug/kg
Chloromethane	ND	50		ug/kg
2-Chlorotoluene	ND	50		ug/kg
4-Chlorotoluene	ND	50		ug/kg
Dibromochloromethane	ND	50		ug/kg
1,2-Dibromo-3-Chloropropane	ND	50		ug/kg
1,2-Dibromoethane	ND	50		ug/kg
Dibromomethane	ND	50		ug/kg
1,2-Dichlorobenzene	ND	50		ug/kg
1,3-Dichlorobenzene	ND	50		ug/kg
1,4-Dichlorobenzene	ND	50		ug/kg
Dichlorodifluoromethane	ND	50		ug/kg
1,1-Dichloroethane	ND	50		ug/kg
1,2-Dichloroethane	ND	50		ug/kg
1,1-Dichloroethene	ND	50		ug/kg
c-1,2-Dichloroethene	ND	50		ug/kg
t-1,2-Dichloroethene	ND	50		ug/kg
1,2-Dichloropropane	ND	50		ug/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,084

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	50		ug/kg
2,2-Dichloropropane	ND	50		ug/kg
1,1-Dichloropropene	ND	50		ug/kg
c-1,3-Dichloropropene	ND	50		ug/kg
t-1,3-Dichloropropene	ND	50		ug/kg
Ethylbenzene	ND	50		ug/kg
2-Hexanone	ND	500		ug/kg
Isopropylbenzene	ND	50		ug/kg
p-Isopropyltoluene	ND	50		ug/kg
Methylene Chloride	ND	500		ug/kg
4-Methyl-2-Pentanone	ND	500		ug/kg
Naphthalene	ND	500		ug/kg
n-Propylbenzene	ND	50		ug/kg
Styrene	ND	50		ug/kg
1,1,1,2-Tetrachloroethane	ND	50		ug/kg
1,1,2,2-Tetrachloroethane	ND	50		ug/kg
Tetrachloroethene	ND	50		ug/kg
Toluene	ND	50		ug/kg
1,2,3-Trichlorobenzene	ND	100		ug/kg
1,2,4-Trichlorobenzene	ND	50		ug/kg
1,1,1-Trichloroethane	ND	50		ug/kg
1,1,2-Trichloroethane	ND	50		ug/kg
Trichloroethene	ND	50		ug/kg
Trichlorofluoromethane	ND	500		ug/kg
1,2,3-Trichloropropane	ND	50		ug/kg
1,2,4-Trimethylbenzene	ND	50		ug/kg
1,3,5-Trimethylbenzene	ND	50		ug/kg
Vinyl Acetate	ND	500		ug/kg
Vinyl Chloride	ND	50		ug/kg
p/m-Xylene	ND	50		ug/kg
o-Xylene	ND	50		ug/kg
Methyl-tert-Butyl Ether	ND	50		ug/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990111AE	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,084

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	80-120	
Toluene-d8	101	81-117	
1,4-Bromofluorobenzene	100	74-121	

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	50		mg/kg
Aniline	ND	50		mg/kg
Phenol	ND	50		mg/kg
Bis(2-Chloroethyl) Ether	ND	250		mg/kg
2-Chlorophenol	ND	50		mg/kg
1,3-Dichlorobenzene	ND	50		mg/kg
1,4-Dichlorobenzene	ND	50		mg/kg
Benzyl Alcohol	ND	50		mg/kg
1,2-Dichlorobenzene	ND	50		mg/kg
2-Methylphenol	ND	50		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	50		mg/kg
4-Methylphenol	ND	50		mg/kg
N-Nitroso-di-n-propylamine	ND	50		mg/kg
Hexachloroethane	ND	50		mg/kg
Nitrobenzene	ND	250		mg/kg
Isophorone	ND	50		mg/kg
2-Nitrophenol	ND	50		mg/kg
2,4-Dimethylphenol	ND	50		mg/kg
Benzoic Acid	ND	250		mg/kg
Bis(2-Chloroethoxy) Methane	ND	50		mg/kg
2,4-Dichlorophenol	ND	50		mg/kg
1,2,4-Trichlorobenzene	ND	50		mg/kg
Naphthalene	1820	50	E	mg/kg
4-Chloroaniline	ND	50		mg/kg
Hexachloro-1,3-Butadiene	ND	50		mg/kg
4-Chloro-3-Methylphenol	ND	50		mg/kg
2-Methylnaphthalene	310	50		mg/kg
1-Methylnaphthalene	150	50		mg/kg
Hexachlorocyclopentadiene	ND	50		mg/kg
2,4,5-Trichlorophenol	ND	50		mg/kg
2-Chloronaphthalene	ND	50		mg/kg
2-Nitroaniline	ND	50		mg/kg
Dimethyl Phthalate	ND	50		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	50		mg/kg
3-Nitroaniline	ND	50		mg/kg
Acenaphthene	490	50		mg/kg
2,4-Dinitrophenol	ND	250		mg/kg
4-Nitrophenol	ND	50		mg/kg
Dibenzofuran	310	50		mg/kg
2,4-Dinitrotoluene	ND	50		mg/kg
2,6-Dinitrotoluene	ND	50		mg/kg
Diethyl Phthalate	ND	50		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	50		mg/kg
Fluorene	300	50		mg/kg
4-Nitroaniline	ND	50		mg/kg
Azobenzene	ND	50		mg/kg
4,6-Dinitro-2-Methylphenol	ND	250		mg/kg
N-Nitrosodiphenylamine	ND	50		mg/kg
2,4,6-Trichlorophenol	ND	50		mg/kg
4-Bromophenyl-Phenyl Ether	ND	50		mg/kg
Hexachlorobenzene	ND	50		mg/kg
Pentachlorophenol	ND	250		mg/kg
Phenanthrene	2430	50	E	mg/kg
Anthracene	590	50		mg/kg
Di-n-Butyl Phthalate	ND	50		mg/kg
Fluoranthene	2070	50	E	mg/kg
Benzidine	ND	250		mg/kg
Pyrene	500	50		mg/kg
Pyridine	ND	50		mg/kg
Butyl Benzyl Phthalate	ND	50		mg/kg
3,3'-Dichlorobenzidine	ND	50		mg/kg
Benzo (a) Anthracene	510	50		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	50		mg/kg
Chrysene	460	50		mg/kg
Di-n-Octyl Phthalate	ND	50		mg/kg
Benzo (b) Fluoranthene	560	50		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-1**
Lab Sample Number: 99-01-0064-13

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	480	50		mg/kg
Benzo (a) Pyrene	560	50		mg/kg
Indeno (1,2,3-c,d) Pyrene	170	50		mg/kg
Dibenz (a,h) Anthracene	80	50		mg/kg
Benzo (g,h,i) Perylene	150	50		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	67	25-121	
Phenol-d6	76	24-113	
Nitrobenzene-d5	64	23-120	
2-Fluorobiphenyl	0	30-115	1
2,4,6-Tribromophenol	0	19-122	1
p-Terphenyl-d14	0	18-137	1

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	50		mg/kg
Aniline	ND	50		mg/kg
Phenol	110	50		mg/kg
Bis(2-Chloroethyl) Ether	ND	250		mg/kg
2-Chlorophenol	ND	50		mg/kg
1,3-Dichlorobenzene	ND	50		mg/kg
1,4-Dichlorobenzene	ND	50		mg/kg
Benzyl Alcohol	ND	50		mg/kg
1,2-Dichlorobenzene	ND	50		mg/kg
2-Methylphenol	ND	50		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	50		mg/kg
4-Methylphenol	120	50		mg/kg
N-Nitroso-di-n-propylamine	ND	50		mg/kg
Hexachloroethane	ND	50		mg/kg
Nitrobenzene	ND	250		mg/kg
Isophorone	ND	50		mg/kg
2-Nitrophenol	ND	50		mg/kg
2,4-Dimethylphenol	60	50		mg/kg
Benzoic Acid	ND	250		mg/kg
Bis(2-Chloroethoxy) Methane	ND	50		mg/kg
2,4-Dichlorophenol	ND	50		mg/kg
1,2,4-Trichlorobenzene	ND	50		mg/kg
Naphthalene	490	50		mg/kg
4-Chloroaniline	ND	50		mg/kg
Hexachloro-1,3-Butadiene	ND	50		mg/kg
4-Chloro-3-Methylphenol	ND	50		mg/kg
2-Methylnaphthalene	250	50		mg/kg
1-Methylnaphthalene	140	50		mg/kg
Hexachlorocyclopentadiene	ND	50		mg/kg
2,4,5-Trichlorophenol	ND	50		mg/kg
2-Chloronaphthalene	ND	50		mg/kg
2-Nitroaniline	ND	50		mg/kg
Dimethyl Phthalate	ND	50		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	130	50		mg/kg
3-Nitroaniline	ND	50		mg/kg
Acenaphthene	260	50		mg/kg
2,4-Dinitrophenol	ND	250		mg/kg
4-Nitrophenol	ND	50		mg/kg
Dibenzofuran	730	50		mg/kg
2,4-Dinitrotoluene	ND	50		mg/kg
2,6-Dinitrotoluene	ND	50		mg/kg
Diethyl Phthalate	ND	50		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	50		mg/kg
Fluorene	240	50		mg/kg
4-Nitroaniline	ND	50		mg/kg
Azobenzene	ND	50		mg/kg
4,6-Dinitro-2-Methylphenol	ND	250		mg/kg
N-Nitrosodiphenylamine	ND	50		mg/kg
2,4,6-Trichlorophenol	ND	50		mg/kg
4-Bromophenyl-Phenyl Ether	ND	50		mg/kg
Hexachlorobenzene	ND	50		mg/kg
Pentachlorophenol	ND	250		mg/kg
Phenanthrene	2970	50	E	mg/kg
Anthracene	820	50		mg/kg
Di-n-Butyl Phthalate	ND	50		mg/kg
Fluoranthene	2120	50	E	mg/kg
Benzidine	ND	250		mg/kg
Pyrene	2430	50	E	mg/kg
Pyridine	ND	50		mg/kg
Butyl Benzyl Phthalate	ND	50		mg/kg
3,3'-Dichlorobenzidine	ND	50		mg/kg
Benzo (a) Anthracene	990	50		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	50		mg/kg
Chrysene	1180	50		mg/kg
Di-n-Octyl Phthalate	ND	50		mg/kg
Benzo (b) Fluoranthene	480	50		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/15/99

Client Sample Number: **WB-2**
Lab Sample Number: 99-01-0064-14

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	600	50		mg/kg
Benzo (a) Pyrene	600	50		mg/kg
Indeno (1,2,3-c,d) Pyrene	210	50		mg/kg
Dibenz (a,h) Anthracene	100	50		mg/kg
Benzo (g,h,i) Perylene	200	50		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	64	25-121	
Phenol-d6	57	24-113	
Nitrobenzene-d5	0	23-120	1
2-Fluorobiphenyl	57	30-115	
2,4,6-Tribromophenol	0	19-122	1
p-Terphenyl-d14	66	18-137	

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/13/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-383

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
1,2-Dichlorobenzene	ND	1.0		mg/kg
2-Methylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
2-Nitroaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/13/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-383

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
Diethyl Phthalate	ND	1.0		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
Di-n-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901087	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/13/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-383

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	105	25-121	
Phenol-d6	85	24-113	
Nitrobenzene-d5	92	23-120	
2-Fluorobiphenyl	91	30-115	
2,4,6-Tribromophenol	65	19-122	
p-Terphenyl-d14	134	18-137	

Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

ICP / GF Metals (Solids)

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/12/98

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: WB-1

Analyte	Method	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Mercury	EPA 7471A	112	115	50 - 130	3	0 - 20

Laboratory Control Sample

Analyte	Method	Conc. Added	Conc. Rec.	%REC	Control Limits
Mercury	EPA 7471A	0.0050	0.0052	103	50 - 130

Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

Method EPA 8015M - D (Solids)

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/08/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: 99-01-0147-1

Analyte	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Total Petroleum Hydrocarbons	99	96	52 - 149	3	0 - 29

Laboratory Control Sample

Analyte	Conc. Added	Conc. Rec.	%REC	Control Limits
Total Petroleum Hydrocarbons	400	364	91	79 - 137

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Quality Control - Spike/Spike Duplicate

EPA 8015M TPH-Gasoline Standard

MS/MSD Batch Number:	99011201ms	Instrument:	GC 21
Matrix:	Solid	Date Extracted:	N/A
Method:	EPA 8015M	Date Analyzed:	01/13/99

Spiked Sample ID: 99-01-0218-3

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH for Gasoline	77	77	52-149	0	0-29	

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Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8015M TPH-Gasoline Standard

LCS/LCSD Batch Number:	99011302sa	Instrument:	GC 21
Matrix:	Solid	Date Extracted:	01/13/99
Method:	EPA 8015M	Date Analyzed:	01/13/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH for Gasoline	83	83	79-137	0	0-29	

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 6010B CAC, Title 22 Metals

MS/MSD Batch Number:	011199ms1	Instrument:	ICP 2000
Matrix:	Solid	Date Extracted:	01/11/99
Method:	EPA 6010B	Date Analyzed:	01/12/99

Spiked Sample ID: WB-2

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	67	68	50-115	1	0-20	
Arsenic	74	79	75-125	6	0-20	3
Barium	79	78	75-125	1	0-20	
Beryllium	71	73	75-125	2	0-20	3
Cadmium	73	75	75-125	3	0-20	3
Chromium (Total)	71	73	75-125	3	0-20	3
Cobalt	74	76	75-125	3	0-20	3
Copper	73	75	75-125	3	0-20	3
Lead	72	65	75-125	8	0-20	3
Molybdenum	71	74	75-125	4	0-20	3
Nickel	73	75	75-125	3	0-20	3
Selenium	75	80	75-125	6	0-20	
Silver	67	70	75-125	4	0-20	3
Thallium	71	73	75-125	3	0-20	3
Vanadium	73	75	75-125	4	0-20	3
Zinc	75	85	75-125	8	0-20	

Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

EPA 6010B CAC, Title 22 Metals

LCS Batch Number:	990111lcs1		
Lab File ID:	990111-L		
Matrix:	Solid	Instrument:	ICP 2000
Method:	EPA 6010B	Date Analyzed:	01/12/99

LCS Sample Number: 097-01-002-832

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Antimony	50	41.1	82	80-120	
Arsenic	50	49.9	100	80-120	
Barium	50	51.0	102	80-120	
Beryllium	50	47.2	94	80-120	
Cadmium	50	48.9	98	80-120	
Chromium (Total)	50	47.6	95	80-120	
Cobalt	50	49.5	99	80-120	
Copper	50	47.7	95	80-120	
Lead	50	47.7	95	80-120	
Molybdenum	50	48.3	97	80-120	
Nickel	50	49.0	98	80-120	
Selenium	50	47.2	94	80-120	
Silver	25	23.5	94	80-120	
Thallium	50	49.1	98	80-120	
Vanadium	50	47.9	96	80-120	
Zinc	50	48.5	97	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8082 PCBs

LCS/LCSD Batch Number:	9901081	Instrument:	GC 10
Matrix:	Solid	Date Extracted:	01/08/99
Method:	EPA 8082	Date Analyzed:	01/08/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	74	73	50-135	1	0-25	

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Quality Control - Spike/Spike Duplicate

EPA 8260B Volatile Organics

MS/MSD Batch Number:	99010187-1	Instrument:	GC/MS C
Matrix:	Solid	Date Extracted:	N/A
Method:	EPA 8260B	Date Analyzed:	01/11/99

Spiked Sample ID: 99-01-0187-1

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	99	99	72-127	0	0-25	
Carbon Tetrachloride	108	113	70-130	5	0-25	
Chlorobenzene	100	99	72-131	1	0-25	
1,2-Dichlorobenzene	96	98	70-130	2	0-25	
1,1-Dichloroethene	98	100	69-127	2	0-25	
Toluene	99	99	75-124	0	0-25	
Trichloroethene	100	100	60-137	0	0-25	
Vinyl Chloride	96	97	70-130	1	0-25	
Methyl-tert-Butyl Ether	99	100	80-120	1	0-25	

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Quality Control - Laboratory Control Sample

EPA 8260B Volatile Organics

LCS Batch Number:	990111AE		
Lab File ID:	11JAN003		
Matrix:	Solid	Instrument:	GC/MS C
Method:	EPA 8260B	Date Analyzed:	01/11/99

LCS Sample Number: 095-01-025-1,084

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Benzene	250	250	100	72-127	
Carbon Tetrachloride	250	263	105	70-130	
Chlorobenzene	250	251	100	72-131	
1,2-Dichlorobenzene	250	247	99	70-130	
1,1-Dichloroethene	250	246	99	69-127	
Toluene	250	252	101	75-124	
Trichloroethene	250	250	100	60-137	
Vinyl Chloride	250	240	96	79-118	
Methyl-tert-Butyl Ether	250	253	101	80-120	

Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8270C Semi-Volatile Organics

LCS/LCSD Batch Number:	9901087	Instrument:	GC/MS H
Matrix:	Solid	Date Extracted:	01/08/99
Method:	EPA 8270C	Date Analyzed:	01/13/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Phenol	83	82	20-120	1	0-42	
2-Chlorophenol	99	98	23-134	1	0-40	
1,4-Dichlorobenzene	87	86	20-124	1	0-28	
N-Nitroso-di-n-propylamine	66	63	0-230	4	0-38	
1,2,4-Trichlorobenzene	90	87	44-142	3	0-28	
Acenaphthene	91	87	47-145	4	0-31	
2,4-Dinitrotoluene	74	81	39-139	9	0-38	

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GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 99-01-0064

Qualifier	Definition
1	Surrogate spike compound was out of control due to required sample dilution, therefore, the sample data was reported without further clarification.
3	MS or MSD compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
E	Concentration exceeds the calibration range.
ND	Not detected at indicated reporting limit.

FAX TRANSMITTAL

URS Greiner Woodward Clyde
2020 East First Street, Suite 400
Santa Ana, California 92705
tel 714/835-6886
fax 714/667-7147

DATE: January 7, 1999

PAGES: 1

TO:	MaryCarol	FROM:	Brian Jacobs
			_____@urscorp.com
FIRM:	CalScience	SUBJECT:	Port of LB Wood Block
FAX NO:	714-984-7501	CC:	Samples dated 1/6/99

MEMO:

Marycarol,

Please analyze WB-1 and WB-2 by:

- Volatile organic compounds (VOCs) by EPA Method 8260,
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270
- Polychlorinated biphenyls (PCBs) by EPA Method 8080
- California Code of Regulations (CCR), Title 22 Metals by EPA Method 6000/7000 Series,
- Cyanide by EPA Method 9010
- Total petroleum hydrocarbons (TPH-g) by EPA Method 8015 modified as gasoline
- Total (extractable) petroleum hydrocarbons (TPH-e) by carbon chain breakout by EPA Method 8015 modified.

Samples should be broken, pulverized, and ground as best as possible so that results reflect a homogenous sample of the block.

Also analyze a sample of the black, glassy material on the bottom side of the wood block of WB-2 for the full suite of tests outline above.

Does 8270 for SVOCs also include creosote and PAHs? If not need to identify the appropriate test method and analyze.

Please call me in the morning.

Thanks Brian

Calscience Environmental Laboratories, Inc.

January 19, 1999

Brian Jacobs
Woodward-Clyde Consultants
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Subject: **Calscience Work Order Number:** **99-01-0064**
Client Reference: **POLB-Naval Shipyard**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 01/06/99 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested, and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Marycarol Valenzuela
Project Manager

William H. Christensen
Quality Assurance Manager

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	01/14/99
	Date Analyzed:	01/16/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 7196A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/L (ppm) using STLC an Extraction.

Sample Number	Chromium VI Concentration	Reporting Limit
P-11 Sump	ND	0.02
Method Blank	ND	0.02

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 6010B ICP Metals, STLC

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990118lcs1	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	STLC	Date Prepared:	01/15/99
Method:	EPA 6010B	Date Analyzed:	01/18/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-15

Parameter	Result	RL	Qualifiers	Units
Cadmium	0.81	0.05		mg/L
Lead	6.39	0.10		mg/L

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Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 6010B ICP Metals, STLC

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990118lcs1	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	STLC	Date Prepared:	01/15/99
Method:	EPA 6010B	Date Analyzed:	01/18/99

Client Sample Number: **Method Blank**
Lab Sample Number: 097-05-001-547

Parameter	Result	RL	Qualifiers	Units
Cadmium	ND	0.05		mg/L
Lead	ND	0.10		mg/L

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Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

Method EPA 7196A

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/16/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: P-11 Sump

Analyte	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Chromium VI	92	92	70 - 130	0	0 - 25

Laboratory Control Sample

Analyte	Conc. Added	Conc. Rec.	%REC	Control Limits
Chromium VI	0.50	0.52	104	80 - 120

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Calscience
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Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 6010B ICP Metals, STLC

MS/MSD Batch Number:	011899ms1	Instrument:	ICP 2000
Matrix:	Aqueous	Date Extracted:	01/15/99
Method:	EPA 6010B	Date Analyzed:	01/18/99

Spiked Sample ID: P-11 SUMP

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Cadmium	96	97	75-125	1	0-20	
Lead	99	98	75-125	1	0-20	

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Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

EPA 6010B ICP Metals, STLC

LCS Batch Number:	990118lcs1		
Lab File ID:	99-01-18		
Matrix:	Aqueous	Instrument:	ICP 2000
Method:	EPA 6010B	Date Analyzed:	01/18/99

LCS Sample Number: 097-05-001-547

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Cadmium	10	10.2	102	80-120	
Lead	10	10.1	101	80-120	

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Calscience Environmental Laboratories, Inc.

GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 99-01-0064

Qualifier	Definition
ND	Not detected at indicated reporting limit.

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Calscience
Environmental
Laboratories, Inc.

January 11, 1999

Brian Jacobs
Woodward-Clyde Consultants
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Subject: **Calscience Work Order Number:** **99-01-0064**
Client Reference: **POLB-Naval Shipyard**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 01/06/99 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested, and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Marycarol Valenzuela
Project Manager

William H. Christensen
Quality Assurance Manager

CAlscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Digested:	01/07/99
	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 7471A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/kg (ppm). Analyses for Mercury were conducted on a total digestion.

Sample Number	Mercury Concentration	Reporting Limit
P-11-3-5	ND	0.25
P-111-3-5	ND	0.25
W-A-5-7	ND	0.25
P-11 SUMP	0.40	0.25
Method Blank	ND	0.25

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Digested:	01/07/99
	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 7470A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/L (ppm). Analyses for Mercury were conducted on a total digestion.

Sample Number	Mercury Concentration	Reporting Limit
P-11	ND	0.0005
P-111	ND	0.0005
W-A	ND	0.0005
P-11 SUMP	0.0039	0.0005
Method Blank	ND	0.0005

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 413.1M
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/kg (ppm).

Sample Number	Oil and Grease Concentration	Reporting Limit
P-11-3-5	ND	10
P-111-3-5	ND	10
W-A-5-7	ND	10
Method Blank	ND	10

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 413.1
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	Oil and Grease Concentration	Reporting Limit
P-11	4	1
P-111	8	1
W-A	12	1
Method Blank	ND	1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

CALSCIENCE
ENVIRONMENTAL
LABORATORIES, INC.

ANALYTICAL REPORT

Woodward-Clyde Consultants		Date Sampled:	01/06/99
2020 East 1st Street, Suite 400		Date Received:	01/06/99
Santa Ana, CA 92705		Date Analyzed:	01/07/99
		Work Order No.:	99-01-0064
Attn: Brian Jacobs		Method:	EPA 9045B
RE: POLB-Naval Shipyard		Page 1 of 1	

All values are reported in pH units.

Sample Number	pH	Reporting Limit
W-A-5-7	6.07	0.01
P-11 SUMP	7.67	0.01

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

1-11-99

CC64

Woodward-Clyde Consultants

CHAIN OF CUSTODY RECORD

SHIPMENT NO.:

PAGE 1 OF 2

DATE 1/6/99

PROJECT NAME: POLB - NAVAL SHIPYARD

PROJECT NO.:

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required*
P-II-3-5	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" S.S. TUBE	ICE	NONE	①,②,③,④,
							⑤,⑥,⑧
P-II-5-7	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" S.S. TUBE	ICE	NONE	HOLD
P-II-10-12	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" S.S. TUBE	ICE	NONE	HOLD
P-II	POLB	WATER	HYDROPUNCH	(5) 40 mL VOAS	ICE	HCL	①,③
↓	↓	↓	↓	(1) 1L AMBER	ICE	$Na_2S_2O_3$	②
				(1) 500 mL AMBER	ICE	HCL	④
				(1) 500 mL AMBER	ICE	H_2SO_4	⑤
				(1) 250 mL ~~AMBER~~ PLASTIC	ICE	HNO_3	⑧
				(1) 1L AMBER	ICE	$Na_2S_2O_3$	⑥
P-III-3-5	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" SS TUBE	ICE	NONE	①,②,③,④,
							⑤,⑥,⑧
P-III-5-7	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" SS TUBE	ICE	NONE	HOLD
P-III-10-12	POLB	SOIL	DIRECT PUSH	1 1/8" x 6" SS TUBE	ICE	NONE	HOLD
P-III	POLB	WATER	HYDROPUNCH	(5) 40 mL VOAS	ICE	HCL	①,③
↓	↓	↓	↓	(1) 1L AMBER	ICE	$Na_2S_2O_3$	②
				(1) 500 mL AMBER	ICE	HCL	④
				(1) 500 mL AMBER	ICE	H_2SO_4	⑤
				(1) 250 mL PLASTIC	ICE	HNO_3	⑧
				(1) 1L AMBER	ICE	$Na_2S_2O_3$	⑥

Total Number of Samples Shipped:

Sampler's Signature: [signature]

Relinquished By:	Received By:	Date / Time
Signature [signature] Printed Name TOMMY C. ALO Company WCC Reason DELIVER TO LAB FOR ANALYSIS	Signature Printed Name Company	Date 1/1 Time
Signature Printed Name Company Reason	Signature Printed Name Company	Date 1/1 Time
Signature Printed Name Company Reason	Signature Printed Name Company	Date 1/1 Time
Signature Printed Name Company Reason	Signature [signature] Printed Name JAY PATEL Company CL	Date 01/06/99 Time 1535

Special Shipment / Handling / Storage Requirements:

① VOCs - EPA METHOD 8260
② SVOCs - EPA METHOD 8270
③ TPH-g - EPA METHOD 8015M
④ TPH-d - EPA METHOD 8015M
⑤ OIL & GREASE - EPA METHOD 413.1
⑥ PCBs - EPA METHOD 8080
⑦ CYANIDE - EPA METHOD 9010
⑧ METALS - EPA METHOD 6000/7000

* Note -- This does not constitute authorization to proceed with analysis

⑩ TH (WATER)

* CONTACT: BRIAN JACOBS

1 AT = 48 HOURS (THAN 8:00 AM 1-11-99)

0064

Woodward-Clyde Consultants

CHAIN OF CUSTODY RECORD

SHIPMENT NO.:

PAGE 2 OF 2

DATE 1/6/99

PROJECT NAME: POLB - NAVAL SHIPYARD

PROJECT NO.:

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required *
W-A-3-5	POLB	SOIL	DIRECT PUSH	1 1/2" x 6" SS TUBE	ICE	NONE	HOLD
W-A-5-7	POLB	SOIL	DIRECT PUSH	↓	↓	↓	1, 2, 3, 4, 5, 7, 9, 8
W-A-10-12	POLB	SOIL	DIRECT PUSH	↓	↓	↓	HOLD
W-A	POLB	WATER	HYDROPUNCH	(4) 40 mL VOAs	ICE	HCL	1, 3
↓	↓	↓	↓	(1) 1 L AMBER	↓	$Na_2S_2O_3$	2
				(1) 500 mL AMBER		HCL	4
				(1) 500 mL AMBER		H_2SO_4	5
				(1) 250 mL PLASTIC		NaOH	7
				(1) 100 mL PLASTIC		NONE	10
				(1) 250 mL PLASTIC		HNO_3	8
WB-1	POLB	SOLID	GRAB	NONE	ICE	NONE	HOLD
WB-2	POLB	SOLID	GRAB	NONE	ICE	NONE	HOLD
P-11 SUMP	POLB	WATER	GRAB	(1) 1 L AMBER	ICE	$Na_2S_2O_3$	2
↓	↓	↓	↓	(1) 250 mL PLASTIC	ICE	HNO_3	8
				(1) 100 mL PLASTIC	ICE	NONE	10
EB-1	POLB	WATER	GRAB	(2) 40 mL VOAs	ICE	HCL	1
TB-0101	POLB	WATER	LAB	(2) 40 mL VOAs	ICE	HCL	1
P-11 SUMP	POLB	SLUDGE	GRAB	(1) WIDE MOUTH GLASS JAR	ICE	NONE	2, 8, 9

Total Number of Samples Shipped:　　Sampler's Signature: [signature]

Relinquished By:	Received By:	Date / Time
Signature [signature] Printed Name Tommy C. Alo Company WCC Reason DELIVER TO LAB FOR ANALYSIS	Signature Printed Name Company	Date / / Time
Signature Printed Name Company Reason	Signature Printed Name Company	Date / / Time
Signature Printed Name Company Reason	Signature Printed Name Company	Date / / Time
Signature Printed Name Company Reason	Signature [signature] Printed Name JAY PATEL Company CEL	Date / / Time

Special Shipment / Handling / Storage Requirements:

1. VOCs - EPA 8260
2. SVOCs - EPA 8270
3. TPH-g - 8015m
4. TPH-d - EPA 8015m
5. OIL & GREASE - EPA 413.1
6. PCBs - EPA 8080
7. CYANIDE - EPA 9010
8. METALS - EPA 6000/7000 SERIES
9. pH (SOIL) - EPA 9045

* Note - This does not constitute authorization to proceed with analysis

* CONTACT BRIAN JACOBY FOR QUESTIONS

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8270C Semi-Volatile Organics

LCS/LCSD Batch Number:	9901063	Instrument:	GC/MS F
Matrix:	Aqueous	Date Extracted:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Phenol	50	51	20-120	1	0-42	
2-Chlorophenol	60	70	23-134	15	0-40	
1,4-Dichlorobenzene	98	99	20-124	1	0-28	
N-Nitroso-di-n-propylamine	100	98	0-230	2	0-38	
1,2,4-Trichlorobenzene	92	98	44-142	6	0-28	
Acenaphthene	106	103	47-145	2	0-31	
2,4-Dinitrotoluene	99	103	39-139	3	0-38	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

EPA 8270C Semi-Volatile Organics

LCS Batch Number:	9901065		
Lab File ID:	2101020		
Matrix:	Solid	Instrument:	GC/MS F
Method:	EPA 8270C	Date Analyzed:	01/07/99

LCS Sample Number: 095-01-002-380

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Phenol	20	21.3	107	20-120	
2-Chlorophenol	20	19.2	96	23-134	
1,4-Dichlorobenzene	20	18.7	94	20-124	
N-Nitroso-di-n-propylamine	20	18.7	94	0-230	
1,2,4-Trichlorobenzene	20	18.0	90	44-142	
Acenaphthene	20	20.1	100	47-145	
2,4-Dinitrotoluene	20	14.1	71	39-139	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 8270C Semi-Volatile Organics

MS/MSD Batch Number:	99010641	Instrument:	GC/MS F
Matrix:	Solid	Date Extracted:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Spiked Sample ID: P-11-3-5

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Phenol	92	84	20-120	9	0-42	
2-Chlorophenol	96	87	23-134	10	0-40	
1,4-Dichlorobenzene	100	90	20-124	11	0-28	
N-Nitroso-di-n-propylamine	98	94	0-230	4	0-38	
1,2,4-Trichlorobenzene	96	91	44-142	5	0-28	
Acenaphthene	104	101	47-145	3	0-31	
2,4-Dinitrotoluene	97	92	39-139	5	0-38	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

EPA 8260B Volatile Organics

LCS Batch Number:	990107AW		
Lab File ID:	07JAN003		
Matrix:	Aqueous	Instrument:	GC/MS A
Method:	EPA 8260B	Date Analyzed:	01/07/99

LCS Sample Number: 095-01-026-964

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Benzene	50	49.7	99	72-127	
Carbon Tetrachloride	50	47.3	95	70-130	
Chlorobenzene	50	51.9	104	72-131	
1,2-Dichlorobenzene	50	51.2	102	70-130	
1,1-Dichloroethene	50	46.6	93	69-127	
Toluene	50	51.5	103	75-124	
Trichloroethene	50	49.9	100	60-137	
Vinyl Chloride	50	47.0	94	79-118	
Methyl-tert-Butyl Ether	50	46.3	93	80-120	

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Quality Control - Laboratory Control Sample

EPA 8260B Volatile Organics

LCS Batch Number:	990107AS		
Lab File ID:	07JAN003		
Matrix:	Solid	Instrument:	GC/MS C
Method:	EPA 8260B	Date Analyzed:	01/07/99

LCS Sample Number: 095-01-025-1,081

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Benzene	250	251	100	72-127	
Carbon Tetrachloride	250	289	116	70-130	
Chlorobenzene	250	253	101	72-131	
1,2-Dichlorobenzene	250	252	101	70-130	
1,1-Dichloroethene	250	253	101	69-127	
Toluene	250	254	102	75-124	
Trichloroethene	250	255	102	60-137	
Vinyl Chloride	250	251	100	79-118	
Methyl-tert-Butyl Ether	250	248	99	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 8260B Volatile Organics

MS/MSD Batch Number:	9010064-12	Instrument:	GC/MS A
Matrix:	Aqueous	Date Extracted:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Spiked Sample ID: W-A

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	98	100	72-127	2	0-25	
Carbon Tetrachloride	91	96	70-130	5	0-25	
Chlorobenzene	102	106	72-131	4	0-25	
1,2-Dichlorobenzene	101	104	70-130	3	0-25	
1,1-Dichloroethene	90	94	69-127	4	0-25	
Toluene	102	104	75-124	2	0-25	
Trichloroethene	100	102	60-137	2	0-25	
Vinyl Chloride	90	96	70-130	6	0-25	
Methyl-tert-Butyl Ether	99	104	80-120	5	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 8260B Volatile Organics

MS/MSD Batch Number:	99010068-2	Instrument:	GC/MS C
Matrix:	Solid	Date Extracted:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Spiked Sample ID: 99-01-0068-2

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	100	101	72-127	1	0-25	
Carbon Tetrachloride	108	106	70-130	2	0-25	
Chlorobenzene	100	101	72-131	1	0-25	
1,2-Dichlorobenzene	100	101	70-130	1	0-25	
1,1-Dichloroethene	102	102	69-127	0	0-25	
Toluene	100	94	75-124	6	0-25	
Trichloroethene	101	102	60-137	1	0-25	
Vinyl Chloride	102	101	70-130	1	0-25	
Methyl-tert-Butyl Ether	103	104	80-120	1	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8082 PCBs

LCS/LCSD Batch Number:	9901064	Instrument:	GC 10
Matrix:	Aqueous	Date Extracted:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	65	64	50-135	1	0-25	

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 8082 PCBs

LCS/LCSD Batch Number:	9901061	Instrument:	GC 10
Matrix:	Solid	Date Extracted:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1260	60	52	50-135	14	0-25	

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Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

EPA 6010B CAC, Title 22 Metals

LCS Batch Number:	990107lcs2		
Lab File ID:	990107LC		
Matrix:	Aqueous	Instrument:	ICP 2000
Method:	EPA 6010B	Date Analyzed:	01/07/99

LCS Sample Number: 097-01-003-681

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Antimony	1.00	0.818	82	80-120	
Arsenic	1.00	1.03	103	80-120	
Barium	1.00	1.14	114	80-120	
Beryllium	1.00	1.04	104	80-120	
Cadmium	1.00	1.03	103	80-120	
Chromium (Total)	1.00	0.989	99	80-120	
Cobalt	1.00	1.06	106	80-120	
Copper	1.00	1.05	105	80-120	
Lead	1.00	1.01	101	80-120	
Molybdenum	1.00	0.985	98	80-120	
Nickel	1.00	1.03	103	80-120	
Selenium	1.00	0.954	95	80-120	
Silver	0.500	0.524	105	80-120	
Thallium	1.00	1.03	102	80-120	
Vanadium	1.00	1.04	104	80-120	
Zinc	1.00	1.02	102	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

EPA 6010B CAC, Title 22 Metals

LCS/LCSD Batch Number:	990107lcs3	Instrument:	ICP 2000
Matrix:	Solid	Date Extracted:	01/07/99
Method:	EPA 6010B	Date Analyzed:	01/07/99

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	94	94	80-120	0	0-20	
Arsenic	109	109	80-120	0	0-20	
Barium	113	112	80-120	0	0-20	
Beryllium	107	106	80-120	0	0-20	
Cadmium	109	108	80-120	0	0-20	
Chromium (Total)	108	107	80-120	0	0-20	
Cobalt	112	111	80-120	0	0-20	
Copper	108	107	80-120	0	0-20	
Lead	106	106	80-120	0	0-20	
Molybdenum	105	104	80-120	0	0-20	
Nickel	110	109	80-120	0	0-20	
Selenium	100	100	80-120	0	0-20	
Silver	107	106	80-120	0	0-20	
Thallium	107	107	80-120	0	0-20	
Vanadium	109	108	80-120	0	0-20	
Zinc	107	107	80-120	0	0-20	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 6010B CAC, Title 22 Metals

MS/MSD Batch Number:	010799ms2	Instrument:	ICP 2000
Matrix:	Aqueous	Date Extracted:	01/07/99
Method:	EPA 6010B	Date Analyzed:	01/07/99

Spiked Sample ID: 99-01-0075-1

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	108	105	80-120	3	0-20	
Arsenic	113	110	80-120	3	0-20	
Barium	117	112	80-120	3	0-20	
Beryllium	110	106	80-120	5	0-20	
Cadmium	110	106	80-120	5	0-20	
Chromium (Total)	110	106	80-120	4	0-20	
Cobalt	114	110	80-120	4	0-20	
Copper	115	109	80-120	4	0-20	
Lead	111	107	80-120	4	0-20	
Molybdenum	108	105	80-120	4	0-20	
Nickel	112	108	80-120	3	0-20	
Selenium	99	96	80-120	3	0-20	
Silver	110	106	80-120	4	0-20	
Thallium	112	108	80-120	4	0-20	
Vanadium	111	108	80-120	3	0-20	
Zinc	106	100	80-120	4	0-20	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

EPA 6010B CAC, Title 22 Metals

MS/MSD Batch Number:	010799ms3	Instrument:	ICP 2000
Matrix:	Solid	Date Extracted:	01/07/99
Method:	EPA 6010B	Date Analyzed:	01/07/99

Spiked Sample ID: P-11-3-5

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	41	53	50-115	24	0-20	3
Arsenic	79	96	75-125	17	0-20	
Barium	60	102	75-125	18	0-20	3
Beryllium	81	96	75-125	17	0-20	
Cadmium	80	96	75-125	17	0-20	
Chromium (Total)	79	99	75-125	18	0-20	
Cobalt	80	98	75-125	18	0-20	
Copper	85	105	75-125	18	0-20	
Lead	82	98	75-125	18	0-20	
Molybdenum	77	93	75-125	18	0-20	
Nickel	79	100	75-125	19	0-20	
Selenium	74	87	75-125	16	0-20	3
Silver	83	98	75-125	17	0-20	
Thallium	80	97	75-125	18	0-20	
Vanadium	79	98	75-125	15	0-20	
Zinc	73	99	75-125	16	0-20	3

Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

Method EPA 8015M - G (Aqueous)

Woodward-Clyde Consultants	Work Order No.: 99-01-0064
Page 1 of 1	Date Analyzed: 01/08/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: 99-01-0066-13

Analyte	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Total Petroleum Hydrocarbons	94	97	69 - 136	3	0 - 27

Laboratory Control Sample

Analyte	Conc. Added	Conc. Rec.	%REC	Control Limits
Total Petroleum Hydrocarbons	2000	1970	98	77 - 136

Surrogate Recoveries (in %)

Sample Number	S1
P-11	91
P-111	91
W-A	92
Method Blank	88

Surrogate Compound	%REC Acceptable Limits
S1 > 4-Bromofluorobenzene	56 - 136

Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

Method EPA 8015M - G (Solids)

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/07/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: 99-01-0065-4

Analyte	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Total Petroleum Hydrocarbons	84	75	52 - 149	11	0 - 29

Laboratory Control Sample

Analyte	Conc. Added	Conc. Rec.	%REC	Control Limits
Total Petroleum Hydrocarbons	2.00	1.77	89	79 - 137

Surrogate Recoveries (in %)

Sample Number	S1
P-11-3-5	87
P-111-3-5	86
W-A-5-7	99
Method Blank	96

Surrogate Compound	%REC Acceptable Limits
S1 > 4-Bromofluorobenzene	45 - 141

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Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

Method EPA 8015M - D (Aqueous)

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/06/99

LCS/LCS Duplicate

Analyte	LCS%REC	LCSD%REC	Control Limits	%RPD	Control Limits
Total Petroleum Hydrocarbons	109	113	77 - 136	3	0 - 31

Surrogate Recoveries (in %)

Sample Number	S1
P-11	102
P-111	109
W-A	111
Method Blank	133

Surrogate Compound	%REC Acceptable Limits
S1 > Decachlorobiphenyl	58 - 152

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QUALITY ASSURANCE SUMMARY

Method EPA 8015M - D (Solids)

Woodward-Clyde Consultants		Work Order No.:	99-01-0064
Page 1 of 1		Date Analyzed:	01/05/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: 99-01-0035-12

Analyte	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Total Petroleum Hydrocarbons	110	115	52 - 149	4	0 - 29

Laboratory Control Sample

Analyte	Conc. Added	Conc. Rec.	%REC	Control Limits
Total Petroleum Hydrocarbons	400	434	108	79 - 137

Surrogate Recoveries (in %)

Sample Number	S1
P-11-3-5	112
P-111-3-5	113
W-A-5-7	116
Method Blank	129

Surrogate Compound	%REC Acceptable Limits
S1 > Decachlorobiphenyl	52 - 135

Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

ICP / GF Metals (Aqueous)

Woodward-Clyde Consultants	Work Order No.: 99-01-0064
Page 1 of 1	Date Analyzed: 01/07/99

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: P-11

Analyte	Method	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Mercury	EPA 7470A	107	105	50 - 130	2	0 - 20

Laboratory Control Sample

Analyte	Method	Conc. Added	Conc. Rec.	%REC	Control Limits
Mercury	EPA 7470A	0.0050	0.0054	108	50 - 130

Calscience Environmental Laboratories, Inc.

QUALITY ASSURANCE SUMMARY

ICP / GF Metals (Solids)

Woodward-Clyde Consultants
Page 1 of 1

Work Order No.: 99-01-0064
Date Analyzed: 01/07/98

Matrix Spike/Matrix Spike Duplicate

Sample Spiked: P-11-3-5

Analyte	Method	MS%REC	MSD%REC	Control Limits	%RPD	Control Limits
Mercury	EPA 7471A	117	121	50 - 130	3	0 - 20

Laboratory Control Sample

Analyte	Method	Conc. Added	Conc. Rec.	%REC	Control Limits
Mercury	EPA 7471A	0.0050	0.0057	114	50 - 130

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Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-003-360

Parameter	Result	RL	Qualifiers	Units
Benzo (a) Pyrene	ND	10		ug/L
Benzo (g,h,i) Perylene	ND	10		ug/L
Indeno (1,2,3-c,d) Pyrene	ND	10		ug/L
Dibenz (a,h) Anthracene	ND	10		ug/L
1-Methylnaphthalene	ND	10		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	22	21-100	
Phenol-d6	36	10-94	
Nitrobenzene-d5	87	35-114	
2-Fluorobiphenyl	86	43-116	
2,4,6-Tribromophenol	19	10-123	
p-Terphenyl-d14	75	33-141	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-003-360

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	10		ug/L
3-Nitroaniline	ND	10		ug/L
Acenaphthene	ND	10		ug/L
2,4-Dinitrophenol	ND	50		ug/L
4-Nitrophenol	ND	10		ug/L
Dibenzofuran	ND	10		ug/L
2,4-Dinitrotoluene	ND	10		ug/L
2,6-Dinitrotoluene	ND	10		ug/L
[illegible]hyl Phthalate	ND	10		ug/L
[illegible]lorophenyl-Phenyl Ether	ND	10		ug/L
Fluorene	ND	10		ug/L
4-Nitroaniline	ND	10		ug/L
Azobenzene	ND	10		ug/L
4,6-Dinitro-2-Methylphenol	ND	50		ug/L
N-Nitrosodiphenylamine	ND	10		ug/L
4-Bromophenyl-Phenyl Ether	ND	10		ug/L
Hexachlorobenzene	ND	10		ug/L
Pentachlorophenol	ND	10		ug/L
Phenanthrene	ND	10		ug/L
Anthracene	ND	10		ug/L
Di-n-Butyl Phthalate	ND	10		ug/L
Fluoranthene	ND	10		ug/L
Benzidine	ND	50		ug/L
Pyrene	ND	10		ug/L
Pyridine	ND	10		ug/L
Butyl Benzyl Phthalate	ND	10		ug/L
3,3'-Dichlorobenzidine	ND	25		ug/L
Benzo (a) Anthracene	ND	10		ug/L
Bis(2-Ethylhexyl) Phthalate	ND	10		ug/L
Chrysene	ND	10		ug/L
Di-n-Octyl Phthalate	ND	10		ug/L
[illegible]zo (b) Fluoranthene	ND	10		ug/L
Benzo (k) Fluoranthene	ND	10		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-003-360

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	10		ug/L
Aniline	ND	10		ug/L
Phenol	ND	10		ug/L
Bis(2-Chloroethyl) Ether	ND	25		ug/L
2-Chlorophenol	ND	10		ug/L
1,3-Dichlorobenzene	ND	10		ug/L
1,4-Dichlorobenzene	ND	10		ug/L
Benzyl Alcohol	ND	10		ug/L
1,2-Dichlorobenzene	ND	10		ug/L
2-Methylphenol	ND	10		ug/L
Bis(2-Chloroisopropyl) Ether	ND	10		ug/L
4-Methylphenol	ND	10		ug/L
N-Nitroso-di-n-propylamine	ND	10		ug/L
Hexachloroethane	ND	10		ug/L
Nitrobenzene	ND	25		ug/L
Isophorone	ND	10		ug/L
2-Nitrophenol	ND	10		ug/L
2,4-Dimethylphenol	ND	10		ug/L
Benzoic Acid	ND	50		ug/L
Bis(2-Chloroethoxy) Methane	ND	10		ug/L
2,4-Dichlorophenol	ND	10		ug/L
1,2,4-Trichlorobenzene	ND	10		ug/L
Naphthalene	ND	10		ug/L
4-Chloroaniline	ND	10		ug/L
Hexachloro-1,3-Butadiene	ND	10		ug/L
4-Chloro-3-Methylphenol	ND	10		ug/L
2-Methylnaphthalene	ND	10		ug/L
Hexachlorocyclopentadiene	ND	25		ug/L
2,4,6-Trichlorophenol	ND	10		ug/L
2,4,5-Trichlorophenol	ND	10		ug/L
2-Chloronaphthalene	ND	10		ug/L
2-Nitroaniline	ND	10		ug/L
Dimethyl Phthalate	ND	10		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-15

Parameter	Result	RL	Qualifiers	Units
Benzo (a) Pyrene	ND	13.5		ug/L
Benzo (g,h,i) Perylene	ND	13.5		ug/L
Indeno (1,2,3-c,d) Pyrene	ND	13.5		ug/L
Dibenz (a,h) Anthracene	ND	13.5		ug/L
1-Methylnaphthalene	ND	13.5		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	27	21-100	
nol-d6	50	10-94	
Nitrobenzene-d5	65	35-114	
2-Fluorobiphenyl	78	43-116	
2,4,6-Tribromophenol	25	10-123	
p-Terphenyl-d14	65	33-141	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-15

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	13.5		ug/L
3-Nitroaniline	ND	13.5		ug/L
Acenaphthene	ND	13.5		ug/L
2,4-Dinitrophenol	ND	68		ug/L
4-Nitrophenol	ND	13.5		ug/L
Dibenzofuran	ND	13.5		ug/L
2,4-Dinitrotoluene	ND	13.5		ug/L
2,6-Dinitrotoluene	ND	13.5		ug/L
Diethyl Phthalate	ND	13.5		ug/L
4-Chlorophenyl-Phenyl Ether	ND	13.5		ug/L
Fluorene	ND	13.5		ug/L
4-Nitroaniline	ND	13.5		ug/L
Azobenzene	ND	13.5		ug/L
4,6-Dinitro-2-Methylphenol	ND	67.5		ug/L
N-Nitrosodiphenylamine	ND	13.5		ug/L
4-Bromophenyl-Phenyl Ether	ND	13.5		ug/L
Hexachlorobenzene	ND	13.5		ug/L
Pentachlorophenol	ND	13.5		ug/L
Phenanthrene	ND	13.5		ug/L
Anthracene	ND	13.5		ug/L
Di-n-Butyl Phthalate	ND	13.5		ug/L
Fluoranthene	ND	13.5		ug/L
Benzidine	ND	67.5		ug/L
Pyrene	ND	13.5		ug/L
Pyridine	ND	13.5		ug/L
Butyl Benzyl Phthalate	ND	13.5		ug/L
3,3'-Dichlorobenzidine	ND	33.8		ug/L
Benzo (a) Anthracene	ND	13.5		ug/L
Bis(2-Ethylhexyl) Phthalate	ND	13.5		ug/L
Chrysene	ND	13.5		ug/L
Di-n-Octyl Phthalate	ND	13.5		ug/L
Benzo (b) Fluoranthene	ND	13.5		ug/L
Benzo (k) Fluoranthene	ND	13.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-15

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	13.5		ug/L
Aniline	ND	13.5		ug/L
Phenol	ND	13.5		ug/L
Bis(2-Chloroethyl) Ether	ND	33.8		ug/L
2-Chlorophenol	ND	13.5		ug/L
1,3-Dichlorobenzene	ND	13.5		ug/L
1,4-Dichlorobenzene	ND	13.5		ug/L
Benzyl Alcohol	ND	13.5		ug/L
[illegible]Dichlorobenzene	ND	13.5		ug/L
[illegible]ethylphenol	ND	13.5		ug/L
Bis(2-Chloroisopropyl) Ether	ND	13.5		ug/L
4-Methylphenol	ND	13.5		ug/L
N-Nitroso-di-n-propylamine	ND	13.5		ug/L
Hexachloroethane	ND	13.5		ug/L
Nitrobenzene	ND	33.8		ug/L
Isophorone	ND	13.5		ug/L
2-Nitrophenol	ND	13.5		ug/L
2,4-Dimethylphenol	ND	13.5		ug/L
Benzoic Acid	ND	68		ug/L
Bis(2-Chloroethoxy) Methane	ND	13.5		ug/L
2,4-Dichlorophenol	ND	13.5		ug/L
1,2,4-Trichlorobenzene	ND	13.5		ug/L
Naphthalene	ND	13.5		ug/L
4-Chloroaniline	ND	13.5		ug/L
Hexachloro-1,3-Butadiene	ND	13.5		ug/L
4-Chloro-3-Methylphenol	ND	13.5		ug/L
2-Methylnaphthalene	ND	13.5		ug/L
Hexachlorocyclopentadiene	ND	33.8		ug/L
2,4,6-Trichlorophenol	ND	13.5		ug/L
2,4,5-Trichlorophenol	ND	13.5		ug/L
2-Chloronaphthalene	ND	13.5		ug/L
[illegible]troaniline	ND	13.5		ug/L
Dimethyl Phthalate	ND	13.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/08/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
Benzo (a) Pyrene	ND	12		ug/L
Benzo (g,h,i) Perylene	ND	12		ug/L
Indeno (1,2,3-c,d) Pyrene	ND	12		ug/L
Dibenz (a,h) Anthracene	ND	12		ug/L
1-Methylnaphthalene	ND	12		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	65	21-100	
Phenol-d6	67	10-94	
Nitrobenzene-d5	81	35-114	
2-Fluorobiphenyl	93	43-116	
2,4,6-Tribromophenol	71	10-123	
p-Terphenyl-d14	78	33-141	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/08/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	12		ug/L
3-Nitroaniline	ND	12		ug/L
Acenaphthene	ND	12		ug/L
2,4-Dinitrophenol	ND	60		ug/L
4-Nitrophenol	ND	12		ug/L
Dibenzofuran	ND	12		ug/L
2,4-Dinitrotoluene	ND	12		ug/L
2,6-Dinitrotoluene	ND	12		ug/L
Diethyl Phthalate	ND	12		ug/L
4-Chlorophenyl-Phenyl Ether	ND	12		ug/L
Fluorene	ND	12		ug/L
4-Nitroaniline	ND	12		ug/L
Azobenzene	ND	12		ug/L
4,6-Dinitro-2-Methylphenol	ND	60		ug/L
N-Nitrosodiphenylamine	ND	12		ug/L
4-Bromophenyl-Phenyl Ether	ND	12		ug/L
Hexachlorobenzene	ND	12		ug/L
Pentachlorophenol	ND	12		ug/L
Phenanthrene	ND	12		ug/L
Anthracene	ND	12		ug/L
Di-n-Butyl Phthalate	ND	12		ug/L
Fluoranthene	ND	12		ug/L
Benzidine	ND	60		ug/L
Pyrene	ND	12		ug/L
Pyridine	ND	12		ug/L
Butyl Benzyl Phthalate	ND	12		ug/L
3,3'-Dichlorobenzidine	ND	30		ug/L
Benzo (a) Anthracene	ND	12		ug/L
Bis(2-Ethylhexyl) Phthalate	ND	12		ug/L
Chrysene	ND	12		ug/L
Di-n-Octyl Phthalate	ND	12		ug/L
Benzo (b) Fluoranthene	ND	12		ug/L
Benzo (k) Fluoranthene	ND	12		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/08/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	12		ug/L
Aniline	ND	12		ug/L
Phenol	ND	12		ug/L
Bis(2-Chloroethyl) Ether	ND	30		ug/L
2-Chlorophenol	ND	12		ug/L
1,3-Dichlorobenzene	ND	12		ug/L
1,4-Dichlorobenzene	ND	12		ug/L
Benzyl Alcohol	ND	12		ug/L
1,2-Dichlorobenzene	ND	12		ug/L
2-Methylphenol	ND	12		ug/L
Bis(2-Chloroisopropyl) Ether	ND	12		ug/L
4-Methylphenol	ND	12		ug/L
N-Nitroso-di-n-propylamine	ND	12		ug/L
Hexachloroethane	ND	12		ug/L
Nitrobenzene	ND	30		ug/L
Isophorone	ND	12		ug/L
2-Nitrophenol	ND	12		ug/L
2,4-Dimethylphenol	ND	12		ug/L
Benzoic Acid	ND	60		ug/L
Bis(2-Chloroethoxy) Methane	ND	12		ug/L
2,4-Dichlorophenol	ND	12		ug/L
1,2,4-Trichlorobenzene	ND	12		ug/L
Naphthalene	ND	12		ug/L
4-Chloroaniline	ND	12		ug/L
Hexachloro-1,3-Butadiene	ND	12		ug/L
4-Chloro-3-Methylphenol	ND	12		ug/L
2-Methylnaphthalene	ND	12		ug/L
Hexachlorocyclopentadiene	ND	30		ug/L
2,4,6-Trichlorophenol	ND	12		ug/L
2,4,5-Trichlorophenol	ND	12		ug/L
2-Chloronaphthalene	ND	12		ug/L
2-Nitroaniline	ND	12		ug/L
Dimethyl Phthalate	ND	12		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
Benzo (a) Pyrene	ND	12.5		ug/L
Benzo (g,h,i) Perylene	ND	12.5		ug/L
Indeno (1,2,3-c,d) Pyrene	ND	12.5		ug/L
Dibenz (a,h) Anthracene	ND	12.5		ug/L
1-Methylnaphthalene	ND	12.5		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	45	21-100	
[illegible]ol-d6	32	10-94	
Nitrobenzene-d5	53	35-114	
2-Fluorobiphenyl	53	43-116	
2,4,6-Tribromophenol	56	10-123	
p-Terphenyl-d14	46	33-141	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	12.5		ug/L
3-Nitroaniline	ND	12.5		ug/L
Acenaphthene	ND	12.5		ug/L
2,4-Dinitrophenol	ND	62		ug/L
4-Nitrophenol	ND	12.5		ug/L
Dibenzofuran	ND	12.5		ug/L
2,4-Dinitrotoluene	ND	12.5		ug/L
2,6-Dinitrotoluene	ND	12.5		ug/L
Diethyl Phthalate	ND	12.5		ug/L
4-Chlorophenyl-Phenyl Ether	ND	12.5		ug/L
Fluorene	ND	12.5		ug/L
4-Nitroaniline	ND	12.5		ug/L
Azobenzene	ND	12.5		ug/L
4,6-Dinitro-2-Methylphenol	ND	62.5		ug/L
N-Nitrosodiphenylamine	ND	12.5		ug/L
4-Bromophenyl-Phenyl Ether	ND	12.5		ug/L
Hexachlorobenzene	ND	12.5		ug/L
Pentachlorophenol	ND	12.5		ug/L
Phenanthrene	ND	12.5		ug/L
Anthracene	ND	12.5		ug/L
Di-n-Butyl Phthalate	ND	12.5		ug/L
Fluoranthene	ND	12.5		ug/L
Benzidine	ND	62.5		ug/L
Pyrene	ND	12.5		ug/L
Pyridine	ND	12.5		ug/L
Butyl Benzyl Phthalate	ND	12.5		ug/L
3,3'-Dichlorobenzidine	ND	31.2		ug/L
Benzo (a) Anthracene	ND	12.5		ug/L
Bis(2-Ethylhexyl) Phthalate	ND	12.5		ug/L
Chrysene	ND	12.5		ug/L
Di-n-Octyl Phthalate	ND	12.5		ug/L
Benzo (b) Fluoranthene	ND	12.5		ug/L
Benzo (k) Fluoranthene	ND	12.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	12.5		ug/L
Aniline	ND	12.5		ug/L
Phenol	ND	12.5		ug/L
Bis(2-Chloroethyl) Ether	ND	31.2		ug/L
2-Chlorophenol	ND	12.5		ug/L
1,3-Dichlorobenzene	ND	12.5		ug/L
1,4-Dichlorobenzene	ND	12.5		ug/L
Benzyl Alcohol	ND	12.5		ug/L
1,2-Dichlorobenzene	ND	12.5		ug/L
2-Methylphenol	ND	12.5		ug/L
Bis(2-Chloroisopropyl) Ether	ND	12.5		ug/L
4-Methylphenol	ND	12.5		ug/L
N-Nitroso-di-n-propylamine	ND	12.5		ug/L
Hexachloroethane	ND	12.5		ug/L
Nitrobenzene	ND	31.2		ug/L
Isophorone	ND	12.5		ug/L
2-Nitrophenol	ND	12.5		ug/L
2,4-Dimethylphenol	ND	12.5		ug/L
Benzoic Acid	ND	62		ug/L
Bis(2-Chloroethoxy) Methane	ND	12.5		ug/L
2,4-Dichlorophenol	ND	12.5		ug/L
1,2,4-Trichlorobenzene	ND	12.5		ug/L
Naphthalene	ND	12.5		ug/L
4-Chloroaniline	ND	12.5		ug/L
Hexachloro-1,3-Butadiene	ND	12.5		ug/L
4-Chloro-3-Methylphenol	ND	12.5		ug/L
2-Methylnaphthalene	ND	12.5		ug/L
Hexachlorocyclopentadiene	ND	31.2		ug/L
2,4,6-Trichlorophenol	ND	12.5		ug/L
2,4,5-Trichlorophenol	ND	12.5		ug/L
2-Chloronaphthalene	ND	12.5		ug/L
2-Nitroaniline	ND	12.5		ug/L
Dimethyl Phthalate	ND	12.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
Benzo (a) Pyrene	ND	14.5		ug/L
Benzo (g,h,i) Perylene	ND	14.5		ug/L
Indeno (1,2,3-c,d) Pyrene	ND	14.5		ug/L
Dibenz (a,h) Anthracene	ND	14.5		ug/L
1-Methylnaphthalene	ND	14.5		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	53	21-100	
Phenol-d6	38	10-94	
Nitrobenzene-d5	66	35-114	
2-Fluorobiphenyl	65	43-116	
2,4,6-Tribromophenol	68	10-123	
p-Terphenyl-d14	54	33-141	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	14.5		ug/L
3-Nitroaniline	ND	14.5		ug/L
Acenaphthene	ND	14.5		ug/L
2,4-Dinitrophenol	ND	72		ug/L
4-Nitrophenol	ND	14.5		ug/L
Dibenzofuran	ND	14.5		ug/L
2,4-Dinitrotoluene	ND	14.5		ug/L
2,6-Dinitrotoluene	ND	14.5		ug/L
Diethyl Phthalate	ND	14.5		ug/L
4-Chlorophenyl-Phenyl Ether	ND	14.5		ug/L
Fluorene	ND	14.5		ug/L
4-Nitroaniline	ND	14.5		ug/L
Azobenzene	ND	14.5		ug/L
4,6-Dinitro-2-Methylphenol	ND	72.5		ug/L
N-Nitrosodiphenylamine	ND	14.5		ug/L
4-Bromophenyl-Phenyl Ether	ND	14.5		ug/L
Hexachlorobenzene	ND	14.5		ug/L
Pentachlorophenol	ND	14.5		ug/L
Phenanthrene	ND	14.5		ug/L
Anthracene	ND	14.5		ug/L
Di-n-Butyl Phthalate	ND	14.5		ug/L
Fluoranthene	ND	14.5		ug/L
Benzidine	ND	72.5		ug/L
Pyrene	ND	14.5		ug/L
Pyridine	ND	14.5		ug/L
Butyl Benzyl Phthalate	ND	14.5		ug/L
3,3'-Dichlorobenzidine	ND	36.2		ug/L
Benzo (a) Anthracene	ND	14.5		ug/L
Bis(2-Ethylhexyl) Phthalate	ND	14.5		ug/L
Chrysene	ND	14.5		ug/L
Di-n-Octyl Phthalate	ND	14.5		ug/L
Benzo (b) Fluoranthene	ND	14.5		ug/L
Benzo (k) Fluoranthene	ND	14.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901063	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3520B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	14.5		ug/L
Aniline	ND	14.5		ug/L
Phenol	ND	14.5		ug/L
Bis(2-Chloroethyl) Ether	ND	36.2		ug/L
2-Chlorophenol	ND	14.5		ug/L
1,3-Dichlorobenzene	ND	14.5		ug/L
1,4-Dichlorobenzene	ND	14.5		ug/L
Benzyl Alcohol	ND	14.5		ug/L
1,2-Dichlorobenzene	ND	14.5		ug/L
2-Methylphenol	ND	14.5		ug/L
Bis(2-Chloroisopropyl) Ether	ND	14.5		ug/L
4-Methylphenol	ND	14.5		ug/L
N-Nitroso-di-n-propylamine	ND	14.5		ug/L
Hexachloroethane	ND	14.5		ug/L
Nitrobenzene	ND	36.2		ug/L
Isophorone	ND	14.5		ug/L
2-Nitrophenol	ND	14.5		ug/L
2,4-Dimethylphenol	ND	14.5		ug/L
Benzoic Acid	ND	72		ug/L
Bis(2-Chloroethoxy) Methane	ND	14.5		ug/L
2,4-Dichlorophenol	ND	14.5		ug/L
1,2,4-Trichlorobenzene	ND	14.5		ug/L
Naphthalene	ND	14.5		ug/L
4-Chloroaniline	ND	14.5		ug/L
Hexachloro-1,3-Butadiene	ND	14.5		ug/L
4-Chloro-3-Methylphenol	ND	14.5		ug/L
2-Methylnaphthalene	ND	14.5		ug/L
Hexachlorocyclopentadiene	ND	36.2		ug/L
2,4,6-Trichlorophenol	ND	14.5		ug/L
2,4,5-Trichlorophenol	ND	14.5		ug/L
2-Chloronaphthalene	ND	14.5		ug/L
2-Nitroaniline	ND	14.5		ug/L
Dimethyl Phthalate	ND	14.5		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-380

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	99	25-121	
[illegible]nol-d6	103	24-113	
[illegible]robenzene-d5	100	23-120	
2-Fluorobiphenyl	99	30-115	
2,4,6-Tribromophenol	93	19-122	
p-Terphenyl-d14	86	18-137	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-380

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
Diethyl Phthalate	ND	1.0		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
Di-n-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-002-380

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
1,2-Dichlorobenzene	ND	1.0		mg/kg
2-Methylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
2-Nitroaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-18

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	97	25-121	
[illegible]ol-d6	93	24-113	
Nitrobenzene-d5	93	23-120	
2-Fluorobiphenyl	99	30-115	
2,4,6-Tribromophenol	101	19-122	
p-Terphenyl-d14	91	18-137	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-18

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
Diethyl Phthalate	ND	1.0		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	4.7	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
Di-n-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-18

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
[illegible]-Dichlorobenzene	ND	1.0		mg/kg
[illegible]ethylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
[illegible]troaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	93	25-121	
Phenol-d6	98	24-113	
Nitrobenzene-d5	93	23-120	
2-Fluorobiphenyl	98	30-115	
2,4,6-Tribromophenol	100	19-122	
p-Terphenyl-d14	82	18-137	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
D[illegible]hyl Phthalate	ND	1.0		mg/kg
4[illegible]lorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
[illegible]-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
1,2-Dichlorobenzene	ND	1.0		mg/kg
2-Methylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
2-Nitroaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	94	25-121	
Phenol-d6	97	24-113	
Nitrobenzene-d5	94	23-120	
2-Fluorobiphenyl	96	30-115	
2,4,6-Tribromophenol	97	19-122	
p-Terphenyl-d14	80	18-137	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
Diethyl Phthalate	ND	1.0		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
Di-n-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
1,2-Dichlorobenzene	ND	1.0		mg/kg
2-Methylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
2-Nitroaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Benzo (k) Fluoranthene	ND	1.0		mg/kg
Benzo (a) Pyrene	ND	1.0		mg/kg
Indeno (1,2,3-c,d) Pyrene	ND	1.0		mg/kg
Dibenz (a,h) Anthracene	ND	1.0		mg/kg
Benzo (g,h,i) Perylene	ND	1.0		mg/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
2-Fluorophenol	98	25-121	
Phenol-d6	97	24-113	
Nitrobenzene-d5	94	23-120	
2-Fluorobiphenyl	99	30-115	
2,4,6-Tribromophenol	98	19-122	
p-Terphenyl-d14	81	18-137	

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Acenaphthylene	ND	1.0		mg/kg
3-Nitroaniline	ND	1.0		mg/kg
Acenaphthene	ND	1.0		mg/kg
2,4-Dinitrophenol	ND	5.0		mg/kg
4-Nitrophenol	ND	1.0		mg/kg
Dibenzofuran	ND	1.0		mg/kg
2,4-Dinitrotoluene	ND	1.0		mg/kg
2,6-Dinitrotoluene	ND	1.0		mg/kg
Diethyl Phthalate	ND	1.0		mg/kg
4-Chlorophenyl-Phenyl Ether	ND	1.0		mg/kg
Fluorene	ND	1.0		mg/kg
4-Nitroaniline	ND	1.0		mg/kg
Azobenzene	ND	1.0		mg/kg
4,6-Dinitro-2-Methylphenol	ND	5.0		mg/kg
N-Nitrosodiphenylamine	ND	1.0		mg/kg
2,4,6-Trichlorophenol	ND	1.0		mg/kg
4-Bromophenyl-Phenyl Ether	ND	1.0		mg/kg
Hexachlorobenzene	ND	1.0		mg/kg
Pentachlorophenol	ND	5.0		mg/kg
Phenanthrene	ND	1.0		mg/kg
Anthracene	ND	1.0		mg/kg
Di-n-Butyl Phthalate	ND	1.0		mg/kg
Fluoranthene	ND	1.0		mg/kg
Benzidine	ND	5.0		mg/kg
Pyrene	ND	1.0		mg/kg
Pyridine	ND	1.0		mg/kg
Butyl Benzyl Phthalate	ND	1.0		mg/kg
3,3'-Dichlorobenzidine	ND	1.0		mg/kg
Benzo (a) Anthracene	ND	1.0		mg/kg
Bis(2-Ethylhexyl) Phthalate	ND	1.0		mg/kg
Chrysene	ND	1.0		mg/kg
Di-n-Octyl Phthalate	ND	1.0		mg/kg
Benzo (b) Fluoranthene	ND	1.0		mg/kg

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ANALYTICAL REPORT
EPA 8270C Semi-Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901065	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3540B	Date Prepared:	01/06/99
Method:	EPA 8270C	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
N-Nitrosodimethylamine	ND	1.0		mg/kg
Aniline	ND	1.0		mg/kg
Phenol	ND	1.0		mg/kg
Bis(2-Chloroethyl) Ether	ND	5.0		mg/kg
2-Chlorophenol	ND	1.0		mg/kg
1,3-Dichlorobenzene	ND	1.0		mg/kg
1,4-Dichlorobenzene	ND	1.0		mg/kg
Benzyl Alcohol	ND	1.0		mg/kg
1,2-Dichlorobenzene	ND	1.0		mg/kg
2-Methylphenol	ND	1.0		mg/kg
Bis(2-Chloroisopropyl) Ether	ND	1.0		mg/kg
4-Methylphenol	ND	1.0		mg/kg
N-Nitroso-di-n-propylamine	ND	1.0		mg/kg
Hexachloroethane	ND	1.0		mg/kg
Nitrobenzene	ND	5.0		mg/kg
Isophorone	ND	1.0		mg/kg
2-Nitrophenol	ND	1.0		mg/kg
2,4-Dimethylphenol	ND	1.0		mg/kg
Benzoic Acid	ND	5.0		mg/kg
Bis(2-Chloroethoxy) Methane	ND	1.0		mg/kg
2,4-Dichlorophenol	ND	1.0		mg/kg
1,2,4-Trichlorobenzene	ND	1.0		mg/kg
Naphthalene	ND	1.0		mg/kg
4-Chloroaniline	ND	1.0		mg/kg
Hexachloro-1,3-Butadiene	ND	1.0		mg/kg
4-Chloro-3-Methylphenol	ND	1.0		mg/kg
2-Methylnaphthalene	ND	1.0		mg/kg
1-Methylnaphthalene	ND	1.0		mg/kg
Hexachlorocyclopentadiene	ND	1.0		mg/kg
2,4,5-Trichlorophenol	ND	1.0		mg/kg
2-Chloronaphthalene	ND	1.0		mg/kg
2-Nitroaniline	ND	1.0		mg/kg
Dimethyl Phthalate	ND	1.0		mg/kg

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-026-964

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	94	86-118	
Toluene-d8	99	88-110	
1,4-Bromofluorobenzene	97	86-115	

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-026-964

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
p-Isopropyltoluene	ND	1.0		ug/L
Methylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
Methyl-tert-Butyl Ether	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-026-964

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
c-1,2-Dichloroethene	ND	1.0		ug/L
t-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **TB-0101**
Lab Sample Number: 99-01-0064-17

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	93	86-118	
Toluene-d8	100	88-110	
1,4-Bromofluorobenzene	97	86-115	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **TB-0101**
Lab Sample Number: 99-01-0064-17

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
p-Isopropyltoluene	ND	1.0		ug/L
Methylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
Methyl-tert-Butyl Ether	ND	1.0		ug/L

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ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **TB-0101**
Lab Sample Number: 99-01-0064-17

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
c-1,2-Dichloroethene	ND	1.0		ug/L
t-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **EB-1**
Lab Sample Number: 99-01-0064-16

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	92	86-118	
Toluene-d8	99	88-110	
1,4-Bromofluorobenzene	96	86-115	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **EB-1**
Lab Sample Number: 99-01-0064-16

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
p-Isopropyltoluene	ND	1.0		ug/L
Methylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
Methyl-tert-Butyl Ether	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **EB-1**
Lab Sample Number: 99-01-0064-16

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
c-1,2-Dichloroethene	ND	1.0		ug/L
t-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	94	86-118	
Toluene-d8	99	88-110	
1,4-Bromofluorobenzene	98	86-115	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
opropyltoluene	ND	1.0		ug/L
hylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
hyl-tert-Butyl Ether	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
c-1,2-Dichloroethene	ND	1.0		ug/L
t-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	93	86-118	
Toluene-d8	100	88-110	
1,4-Bromofluorobenzene	97	86-115	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
p-Isopropyltoluene	ND	1.0		ug/L
Methylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
Methyl-tert-Butyl Ether	1.0	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
cis-1,2-Dichloroethene	ND	1.0		ug/L
trans-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	94	86-118	
Toluene-d8	99	88-110	
1,4-Bromofluorobenzene	97	86-115	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	1.0		ug/L
2,2-Dichloropropane	ND	1.0		ug/L
1,1-Dichloropropene	ND	1.0		ug/L
c-1,3-Dichloropropene	ND	0.5		ug/L
t-1,3-Dichloropropene	ND	0.5		ug/L
Ethylbenzene	ND	1.0		ug/L
2-Hexanone	ND	10		ug/L
Isopropylbenzene	ND	1.0		ug/L
p-Isopropyltoluene	ND	1.0		ug/L
Methylene Chloride	ND	10		ug/L
4-Methyl-2-Pentanone	ND	10		ug/L
Naphthalene	ND	10		ug/L
n-Propylbenzene	ND	1.0		ug/L
Styrene	ND	1.0		ug/L
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L
Tetrachloroethene	ND	1.0		ug/L
Toluene	ND	1.0		ug/L
1,2,3-Trichlorobenzene	ND	1.0		ug/L
1,2,4-Trichlorobenzene	ND	1.0		ug/L
1,1,1-Trichloroethane	ND	1.0		ug/L
1,1,2-Trichloroethane	ND	1.0		ug/L
Trichloroethene	ND	1.0		ug/L
Trichlorofluoromethane	ND	10		ug/L
1,2,3-Trichloropropane	ND	1.0		ug/L
1,2,4-Trimethylbenzene	ND	1.0		ug/L
1,3,5-Trimethylbenzene	ND	1.0		ug/L
Vinyl Acetate	ND	10		ug/L
Vinyl Chloride	ND	0.5		ug/L
p/m-Xylene	ND	1.0		ug/L
o-Xylene	ND	1.0		ug/L
Methyl-tert-Butyl Ether	1.8	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AW	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	10		ug/L
Benzene	ND	0.5		ug/L
Bromobenzene	ND	1.0		ug/L
Bromochloromethane	ND	1.0		ug/L
Bromodichloromethane	ND	1.0		ug/L
Bromoform	ND	1.0		ug/L
Bromomethane	ND	1.0		ug/L
2-Butanone	ND	10		ug/L
n-Butylbenzene	ND	1.0		ug/L
sec-Butylbenzene	ND	1.0		ug/L
tert-Butylbenzene	ND	1.0		ug/L
Carbon Disulfide	ND	10		ug/L
Carbon Tetrachloride	ND	0.5		ug/L
Chlorobenzene	ND	1.0		ug/L
Chloroethane	ND	1.0		ug/L
Chloroform	ND	1.0		ug/L
Chloromethane	ND	1.0		ug/L
2-Chlorotoluene	ND	1.0		ug/L
4-Chlorotoluene	ND	1.0		ug/L
Dibromochloromethane	ND	1.0		ug/L
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L
1,2-Dibromoethane	ND	1.0		ug/L
Dibromomethane	ND	1.0		ug/L
1,2-Dichlorobenzene	ND	1.0		ug/L
1,3-Dichlorobenzene	ND	1.0		ug/L
1,4-Dichlorobenzene	ND	1.0		ug/L
Dichlorodifluoromethane	ND	1.0		ug/L
1,1-Dichloroethane	ND	1.0		ug/L
1,2-Dichloroethane	ND	0.5		ug/L
1,1-Dichloroethene	ND	1.0		ug/L
c-1,2-Dichloroethene	ND	1.0		ug/L
t-1,2-Dichloroethene	ND	1.0		ug/L
1,2-Dichloropropane	ND	1.0		ug/L

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	80-120	
Toluene-d8	102	81-117	
1,4-Bromofluorobenzene	93	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	94	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	80-120	
Toluene-d8	102	81-117	
1,4-Bromofluorobenzene	93	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-025-1,081

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	101	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	100	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	94	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	101	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,3-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Surrogates:	REC (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-120	
Toluene-d8	100	81-117	
1,4-Bromofluorobenzene	100	74-121	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
1,3-Dichloropropane	ND	5.0		ug/kg
2,2-Dichloropropane	ND	5.0		ug/kg
1,1-Dichloropropene	ND	5.0		ug/kg
c-1,3-Dichloropropene	ND	5.0		ug/kg
t-1,3-Dichloropropene	ND	5.0		ug/kg
Ethylbenzene	ND	5.0		ug/kg
2-Hexanone	ND	50		ug/kg
Isopropylbenzene	ND	5.0		ug/kg
p-Isopropyltoluene	ND	5.0		ug/kg
Methylene Chloride	ND	50		ug/kg
4-Methyl-2-Pentanone	ND	50		ug/kg
Naphthalene	ND	50		ug/kg
n-Propylbenzene	ND	5.0		ug/kg
Styrene	ND	5.0		ug/kg
1,1,1,2-Tetrachloroethane	ND	5.0		ug/kg
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg
Tetrachloroethene	ND	5.0		ug/kg
Toluene	ND	5.0		ug/kg
1,2,3-Trichlorobenzene	ND	10		ug/kg
1,2,4-Trichlorobenzene	ND	5.0		ug/kg
1,1,1-Trichloroethane	ND	5.0		ug/kg
1,1,2-Trichloroethane	ND	5.0		ug/kg
Trichloroethene	ND	5.0		ug/kg
Trichlorofluoromethane	ND	50		ug/kg
1,2,3-Trichloropropane	ND	5.0		ug/kg
1,2,4-Trimethylbenzene	ND	5.0		ug/kg
1,3,5-Trimethylbenzene	ND	5.0		ug/kg
Vinyl Acetate	ND	50		ug/kg
Vinyl Chloride	ND	5.0		ug/kg
p/m-Xylene	ND	5.0		ug/kg
o-Xylene	ND	5.0		ug/kg
Methyl-tert-Butyl Ether	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8260B Volatile Organics

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107AS	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	N/A	Date Prepared:	N/A
Method:	EPA 8260B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Acetone	ND	50		ug/kg
Benzene	ND	5.0		ug/kg
Bromobenzene	ND	5.0		ug/kg
Bromochloromethane	ND	5.0		ug/kg
Bromodichloromethane	ND	5.0		ug/kg
Bromoform	ND	5.0		ug/kg
Bromomethane	ND	5.0		ug/kg
2-Butanone	ND	50		ug/kg
n-Butylbenzene	ND	5.0		ug/kg
sec-Butylbenzene	ND	5.0		ug/kg
tert-Butylbenzene	ND	5.0		ug/kg
Carbon Disulfide	ND	50		ug/kg
Carbon Tetrachloride	ND	5.0		ug/kg
Chlorobenzene	ND	5.0		ug/kg
Chloroethane	ND	5.0		ug/kg
Chloroform	ND	5.0		ug/kg
Chloromethane	ND	5.0		ug/kg
2-Chlorotoluene	ND	5.0		ug/kg
4-Chlorotoluene	ND	5.0		ug/kg
Dibromochloromethane	ND	5.0		ug/kg
1,2-Dibromo-3-Chloropropane	ND	5.0		ug/kg
1,2-Dibromoethane	ND	5.0		ug/kg
Dibromomethane	ND	5.0		ug/kg
1,2-Dichlorobenzene	ND	5.0		ug/kg
1,3-Dichlorobenzene	ND	5.0		ug/kg
1,4-Dichlorobenzene	ND	5.0		ug/kg
Dichlorodifluoromethane	ND	5.0		ug/kg
1,1-Dichloroethane	ND	5.0		ug/kg
1,2-Dichloroethane	ND	5.0		ug/kg
1,1-Dichloroethene	ND	5.0		ug/kg
c-1,2-Dichloroethene	ND	5.0		ug/kg
t-1,2-Dichloroethene	ND	5.0		ug/kg
1,2-Dichloropropane	ND	5.0		ug/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901064	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	EPA 3510B	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-015-440

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	1.00		ug/L
Aroclor-1221	ND	1.00		ug/L
Aroclor-1232	ND	1.00		ug/L
Aroclor-1242	ND	1.00		ug/L
Aroclor-1248	ND	1.00		ug/L
Aroclor-1254	ND	1.00		ug/L
Aroclor-1260	ND	1.00		ug/L
Aroclor-1262	ND	1.00		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	90	50-135	
2,4,5,6-Tetrachloro-m-Xylene	103	50-135	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901064	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3510B	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	1.00		ug/L
Aroclor-1221	ND	1.00		ug/L
Aroclor-1232	ND	1.00		ug/L
Aroclor-1242	ND	1.00		ug/L
Aroclor-1248	ND	1.00		ug/L
Aroclor-1254	ND	1.00		ug/L
Aroclor-1260	ND	1.00		ug/L
Aroclor-1262	ND	1.00		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	51	50-135	
2,4,5,6-Tetrachloro-m-Xylene	107	50-135	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901064	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	EPA 3510B	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	1.00		ug/L
Aroclor-1221	ND	1.00		ug/L
Aroclor-1232	ND	1.00		ug/L
Aroclor-1242	ND	1.00		ug/L
Aroclor-1248	ND	1.00		ug/L
Aroclor-1254	ND	1.00		ug/L
Aroclor-1260	ND	1.00		ug/L
Aroclor-1262	ND	1.00		ug/L

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	53	50-135	
2,4,5,6-Tetrachloro-m-Xylene	105	50-135	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-014-1,130

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	59	50-130	
2,4,5,6-Tetrachloro-m-Xylene	69	50-130	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 095-01-014-1,130

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	59	50-130	
2,4,5,6-Tetrachloro-m-Xylene	69	50-130	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	88	50-130	
2,4,5,6-Tetrachloro-m-Xylene	81	50-130	

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	88	50-130	
2,4,5,6-Tetrachloro-m-Xylene	81	50-130	

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ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	108	50-130	
2,4,5,6-Tetrachloro-m-Xylene	92	50-130	

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ANALYTICAL REPORT
EPA 8082 PCBs

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	9901061	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	EPA 3550A	Date Prepared:	01/06/99
Method:	EPA 8082	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Aroclor-1016	ND	50		ug/kg
Aroclor-1221	ND	50		ug/kg
Aroclor-1232	ND	50		ug/kg
Aroclor-1242	ND	50		ug/kg
Aroclor-1248	ND	50		ug/kg
Aroclor-1254	ND	50		ug/kg
Aroclor-1260	ND	50		ug/kg
Aroclor-1262	ND	50		ug/kg

Surrogates:	REC (%)	Control Limits	Qualifiers
Decachlorobiphenyl	108	50-130	
2,4,5,6-Tetrachloro-m-Xylene	92	50-130	

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs2	Date Collected:	N/A
Matrix:	Aqueous	Date Received:	N/A
Preparation:	Total Digestion	Date Prepared:	01/07/99
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 097-01-003-681

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.015		mg/L
Arsenic	ND	0.015		mg/L
Barium	ND	0.010		mg/L
Beryllium	ND	0.001		mg/L
Cadmium	ND	0.005		mg/L
Chromium (Total)	ND	0.005		mg/L
Cobalt	ND	0.005		mg/L
Copper	ND	0.005		mg/L
Lead	ND	0.010		mg/L
Molybdenum	ND	0.005		mg/L
Nickel	ND	0.005		mg/L
Selenium	ND	0.015		mg/L
Silver	ND	0.005		mg/L
Thallium	ND	0.015		mg/L
Vanadium	ND	0.005		mg/L
Zinc	ND	0.010		mg/L

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs2	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-15

Parameter	Result	RL	Qualifiers	Units
Antimony	0.054	0.015		mg/L
Arsenic	0.028	0.015		mg/L
Barium	0.381	0.010		mg/L
Beryllium	ND	0.001		mg/L
Cadmium	1.03	0.005		mg/L
Chromium (Total)	0.206	0.005		mg/L
Cobalt	0.183	0.005		mg/L
Copper	28.3	0.005		mg/L
Lead	1.50	0.010		mg/L
Molybdenum	ND	0.005		mg/L
Nickel	0.950	0.005		mg/L
Selenium	0.016	0.015		mg/L
Silver	0.079	0.005		mg/L
Thallium	ND	0.015		mg/L
Vanadium	0.035	0.005		mg/L
Zinc	40.3	0.010		mg/L

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ANALYTICAL REPORT

EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs2	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **W-A**
Lab Sample Number: 99-01-0064-12

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.015		mg/L
Arsenic	0.023	0.015		mg/L
Barium	0.144	0.010		mg/L
Beryllium	ND	0.001		mg/L
Cadmium	ND	0.005		mg/L
Chromium (Total)	0.010	0.005		mg/L
Cobalt	ND	0.005		mg/L
Copper	0.020	0.005		mg/L
Lead	ND	0.010		mg/L
Molybdenum	0.010	0.005		mg/L
Nickel	ND	0.005		mg/L
Selenium	ND	0.015		mg/L
Silver	ND	0.005		mg/L
Thallium	ND	0.015		mg/L
Vanadium	0.012	0.005		mg/L
Zinc	0.033	0.010		mg/L

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ANALYTICAL REPORT

EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs2	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-111**
Lab Sample Number: 99-01-0064-8

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.015		mg/L
Arsenic	0.018	0.015		mg/L
Barium	0.160	0.010		mg/L
Beryllium	ND	0.001		mg/L
Cadmium	ND	0.005		mg/L
Chromium (Total)	0.029	0.005		mg/L
Cobalt	0.006	0.005		mg/L
Copper	0.038	0.005		mg/L
Lead	0.012	0.010		mg/L
Molybdenum	0.009	0.005		mg/L
Nickel	0.014	0.005		mg/L
Selenium	ND	0.015		mg/L
Silver	ND	0.005		mg/L
Thallium	ND	0.015		mg/L
Vanadium	0.027	0.005		mg/L
Zinc	0.088	0.010		mg/L

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ANALYTICAL REPORT

EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs2	Date Collected:	01/06/99
Matrix:	Aqueous	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-11**
Lab Sample Number: 99-01-0064-4

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.015		mg/L
Arsenic	0.021	0.015		mg/L
Barium	0.140	0.010		mg/L
Beryllium	ND	0.001		mg/L
Cadmium	ND	0.005		mg/L
Chromium (Total)	0.009	0.005		mg/L
Cobalt	ND	0.005		mg/L
Copper	0.015	0.005		mg/L
Lead	ND	0.010		mg/L
Molybdenum	0.008	0.005		mg/L
Nickel	ND	0.005		mg/L
Selenium	ND	0.015		mg/L
Silver	ND	0.005		mg/L
Thallium	ND	0.015		mg/L
Vanadium	0.007	0.005		mg/L
Zinc	0.062	0.010		mg/L

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs3	Date Collected:	N/A
Matrix:	Solid	Date Received:	N/A
Preparation:	Total Digestion	Date Prepared:	01/07/99
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **Method Blank**
Lab Sample Number: 097-01-002-826

Parameter	Result	RL	Qualifiers	Units
Antimony	ND	0.75		mg/kg
Arsenic	ND	0.75		mg/kg
Barium	ND	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	ND	0.50		mg/kg
Chromium (Total)	ND	0.25		mg/kg
Cobalt	ND	0.25		mg/kg
Copper	ND	0.25		mg/kg
Lead	ND	0.50		mg/kg
Molybdenum	ND	0.25		mg/kg
Nickel	ND	0.25		mg/kg
Selenium	ND	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	ND	0.25		mg/kg
Zinc	ND	1.00		mg/kg

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs3	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-11 SUMP**
Lab Sample Number: 99-01-0064-18

Parameter	Result	RL	Qualifiers	Units
Antimony	22.5	0.75		mg/kg
Arsenic	5.77	0.75		mg/kg
Barium	139	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	12.1	0.50		mg/kg
Chromium (Total)	157	0.25		mg/kg
Cobalt	9.65	0.25		mg/kg
Copper	634	0.25		mg/kg
Lead	292	0.50		mg/kg
Molybdenum	13.1	0.25		mg/kg
Nickel	35.9	0.25		mg/kg
Selenium	7.36	0.75		mg/kg
Silver	0.74	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	11.3	0.25		mg/kg
Zinc	1020	1.00		mg/kg

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs3	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **W-A-5-7**
Lab Sample Number: 99-01-0064-10

Parameter	Result	RL	Qualifiers	Units
Antimony	1.06	0.75		mg/kg
Arsenic	1.75	0.75		mg/kg
Barium	78.8	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	ND	0.50		mg/kg
Chromium (Total)	14.9	0.25		mg/kg
Cobalt	8.04	0.25		mg/kg
Copper	11.9	0.25		mg/kg
Lead	2.20	0.50		mg/kg
Molybdenum	ND	0.25		mg/kg
Nickel	11.7	0.25		mg/kg
Selenium	1.41	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	24.4	0.25		mg/kg
Zinc	40.8	1.00		mg/kg

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ANALYTICAL REPORT
EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs3	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-111-3-5**
Lab Sample Number: 99-01-0064-5

Parameter	Result	RL	Qualifiers	Units
Antimony	2.39	0.75		mg/kg
Arsenic	6.21	0.75		mg/kg
Barium	131	0.50		mg/kg
Beryllium	0.46	0.25		mg/kg
Cadmium	0.50	0.50		mg/kg
Chromium (Total)	30.5	0.25		mg/kg
Cobalt	12.6	0.25		mg/kg
Copper	30.9	0.25		mg/kg
Lead	8.24	0.50		mg/kg
Molybdenum	0.60	0.25		mg/kg
Nickel	22.8	0.25		mg/kg
Selenium	2.53	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	40.6	0.25		mg/kg
Zinc	74.0	1.00		mg/kg

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ANALYTICAL REPORT

EPA 6010B CAC, Title 22 Metals

Client Name:	Woodward-Clyde Consultants		
Project ID:	POLB-Naval Shipyard		
Work Order Number:	99-01-0064		
QC Batch ID:	990107lcs3	Date Collected:	01/06/99
Matrix:	Solid	Date Received:	01/06/99
Preparation:	Total Digestion	Date Prepared:	01/07/98
Method:	EPA 6010B	Date Analyzed:	01/07/99

Client Sample Number: **P-11-3-5**
Lab Sample Number: 99-01-0064-1

Parameter	Result	RL	Qualifiers	Units
Antimony	1.10	0.75		mg/kg
Arsenic	4.59	0.75		mg/kg
Barium	74.8	0.50		mg/kg
Beryllium	ND	0.25		mg/kg
Cadmium	ND	0.50		mg/kg
Chromium (Total)	12.9	0.25		mg/kg
Cobalt	6.93	0.25		mg/kg
Copper	8.91	0.25		mg/kg
Lead	1.89	0.50		mg/kg
Molybdenum	0.30	0.25		mg/kg
Nickel	10.1	0.25		mg/kg
Selenium	1.44	0.75		mg/kg
Silver	ND	0.50		mg/kg
Thallium	ND	0.75		mg/kg
Vanadium	20.6	0.25		mg/kg
Zinc	34.7	1.00		mg/kg

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	P/T
	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard	Page 1 of 1	

All total petroleum hydrocarbon concentrations are reported in µg/L (ppb) using gasoline as a standard.

Sample Number	Concentration	Reporting Limit
P-11	ND	500
P-111	ND	500
W-A	ND	500
Method Blank	ND	500

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	P/T
	Date Analyzed:	01/06/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard	Page 1 of 1	

All total petroleum hydrocarbon concentrations are reported in mg/kg (ppm) using gasoline as a standard.

Sample Number	Concentration	Reporting Limit
P-11-3-5	ND	0.5
P-111-3-5	ND	0.5
W-A-5-7	ND	0.5
Method Blank	ND	0.5

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Extracted:	01/05/99
	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 8015M
RE: POLB-Naval Shipyard	Page 1 of 1	

All total petroleum hydrocarbon concentrations are reported in µg/L (ppb) using diesel fuel as a standard.

Sample Number	Concentration	Reporting Limit
P-11	ND	1000
P-111	ND	1000
W-A	ND	1000
Method Blank	ND	1000

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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ANALYTICAL REPORT

Woodward-Clyde Consultants		Date Sampled:	01/06/99
2020 East 1st Street, Suite 400		Date Received:	01/06/99
Santa Ana, CA 92705		Date Extracted:	01/05/99
		Date Analyzed:	01/07/99
		Work Order No.:	99-01-0064
Attn: Brian Jacobs		Method:	EPA 8015M
RE: POLB-Naval Shipyard		Page 1 of 1	

All total petroleum hydrocarbon concentrations are reported in mg/kg (ppm) using diesel fuel as a standard.

Sample Number	Concentration	Reporting Limit
P-11-3-5	ND	5.0
P-111-3-5	ND	5.0
W-A-5-7	ND	5.0
Method Blank	ND	5.0

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 335.2
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	Total Cyanide Concentration	Reporting Limit
W-A	ND	0.05
Method Blank	ND	0.05

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants	Date Sampled:	01/06/99
2020 East 1st Street, Suite 400	Date Received:	01/06/99
Santa Ana, CA 92705	Date Analyzed:	01/07/99
	Work Order No.:	99-01-0064
Attn: Brian Jacobs	Method:	EPA 9010A
RE: POLB-Naval Shipyard	Page 1 of 1	

All concentrations are reported in mg/kg (ppm).

Sample Number	Total Cyanide Concentration	Reporting Limit
W-A-5-7	ND	0.5
Method Blank	ND	0.5

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Woodward-Clyde Consultants		Date Sampled:	01/06/99
2020 East 1st Street, Suite 400		Date Received:	01/06/99
Santa Ana, CA 92705		Date Analyzed:	01/07/99
		Work Order No.:	99-01-0064
Attn: Brian Jacobs		Method:	EPA 150.1
RE: POLB-Naval Shipyard		Page 1 of 1	

All values are reported in pH units.

Sample Number	pH	Reporting Limit
W-A	7.80	0.01
P-11 SUMP	6.02	0.01

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.