

N00204.AR.003596
NAS PENSACOLA
5090.3a

CONTAMINATION ASSESSMENT REPORT ADDENDUM SITE 3557S NAVAL AVIATION
DEPOT NAS PENSACOLA FL
7/1/1994
ABB ENVIRONMENTAL SERVICES, INC

CONTAMINATION ASSESSMENT REPORT ADDENDUM

**Site 3557S
Naval Aviation Depot
Naval Air Station
Pensacola, Florida**

Unit Identification Code: N00204

Contract No. N62467-89-D-0317

Prepared by:

**ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Author:

Jay Koch

Prepared for:

**Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418**

Luis Vazquez, Code 1843, Engineer-in-Charge

July 1994



FOREWORD

Subtitle I of the Hazardous and Solid Waste Amendments (HSWA) of 1984 to the Solid Waste Disposal Act (SWDA) of 1965 established a national regulatory program for managing underground storage tanks (USTs) containing hazardous materials, especially petroleum products. Hazardous wastes stored in USTs were already regulated under the Resource Conservation and Recovery Act (RCRA) of 1976, which is also an amendment to SWDA. Subtitle I requires that the U.S. Environmental Protection Agency (USEPA) promulgate UST regulations. The program was designed to be administered by the individual States, who were allowed to develop more stringent standards, but not less stringent standards. Local governments were permitted to establish regulatory programs and standards that are more stringent, but not less stringent than either State or Federal regulations. The USEPA UST regulations are found in the Code of Federal Regulations (CFR), Title 40, Part 280 (40 CFR 280) (*Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*) and Title 40 CFR 281 (*Approval of State Underground Storage Tank Programs*). Title 40 CFR 280 was revised and published on September 23, 1988, and became effective December 22, 1988.

The Navy's UST program policy is to comply with all Federal, State, and local regulations pertaining to USTs. This report was prepared to satisfy the requirements of Chapter 17-770, Florida Administrative Code (FAC) (*State Underground Petroleum Environmental Response*) regulations on petroleum contamination in Florida's environment as a result of spills or leaking tanks or piping.

Questions regarding this report should be addressed to the Environmental Coordinator, Naval Aviation Depot (NADEP) Pensacola, Pensacola, Florida, at 904-452-2320 or to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENCOM), Code 1843, at DSN 563-0613 or 803-743-0613.

EXECUTIVE SUMMARY

Site 3557S is the former location of two underground storage tanks (USTs) reportedly used for the storage of waste oil at the Naval Aviation Depot, Naval Air Station, Pensacola, Florida. During a tank removal and installation program conducted in 1989 and 1990, the two USTs were removed and replaced with a single 500-gallon UST. The replacement UST was installed in the same location as the former USTs.

A contamination assessment (CA) was conducted from January to February 1992. No volatile organic compounds were detected in the soil by organic vapor analyzer headspace techniques. Lead was detected in soil, but at concentrations below State standards for clean soil. Laboratory groundwater sample analyses indicated that groundwater contamination at the site was minimal.

The findings and conclusions of the CA were presented in a contamination assessment report (CAR), which was submitted to the Florida Department of Environmental Regulation (FDER) in July 1992. (Note: FDER is now known as the Florida Department of Environmental Protection [FDEP], and is hereafter referred to as FDEP). A *No Further Action Proposal (NFAP)* was recommended.

Upon review of the CAR, FDEP requested documentation regarding initial remedial action (IRA) activities performed during the tank removal and installation program. Because IRA documentation was not available, and because it was subsequently discovered that petroleum-contaminated soils had been returned to the UST excavation during IRA activities, FDEP requested that a supplemental soil assessment be conducted.

The supplemental CA was conducted during various phases from January 1992 through June 1994. Part of the supplemental CA was conducted concurrently with and subsequent to UST closure activities performed under the Base Realignment and Closure Initiative. During UST closure activities in May 1994, the replacement UST was removed from the site. This report presents the findings and conclusions of the supplemental assessment and UST closure activities, and incorporates findings and conclusions from the previous CA.

Findings

- Sediments are typically porous, unconsolidated, fine-grained to medium-grained quartz sand. These sediments are part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991). The surficial zone is classified as a Class G-II groundwater source.
- Groundwater was encountered approximately 2 to 5 feet below land surface (bls). Groundwater flow direction varies from north to west, but appears to be predominantly to the northwest.
- Total metals concentrations in soil are below State standards for clean soil.
- Total recoverable petroleum hydrocarbons (TRPH) concentrations in soil vary from less than 5 parts per million (ppm) to 1,720 ppm. Excessively contaminated soil was not identified by organic vapor analyzer headspace

- techniques or visual inspection at the former UST location during UST closure activities. Excessively contaminated soil (TRPH > 50 ppm) is present under most of the grassy area between the concrete apron and asphalt parking lot, underneath the concrete apron northeast of the site, and underneath the asphalt parking lot south of the site (see Executive Summary Figure). The extent of excessively contaminated soil has not been fully assessed underneath the concrete apron north of the UST or in the asphalt parking lot south of the UST.
- Total petroleum hydrocarbons (TPH) fingerprint analyses indicate that TRPH in soil in the immediate UST vicinity can partly be attributed to a discharge from the replacement or former UST; however, fingerprint analyses indicate that TRPH in soil upgradient of the UST cannot directly be attributed to a discharge from the UST.
- Lead was the only contaminant detected in groundwater samples near the former UST during the supplemental CA. Lead concentrations in turbid, unfiltered samples vary from 14.0 parts per billion (ppb) to 23.0 ppb (see Executive Summary Figure). Lead was not detected in filtered groundwater samples.

Conclusions

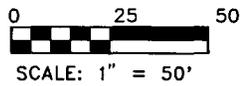
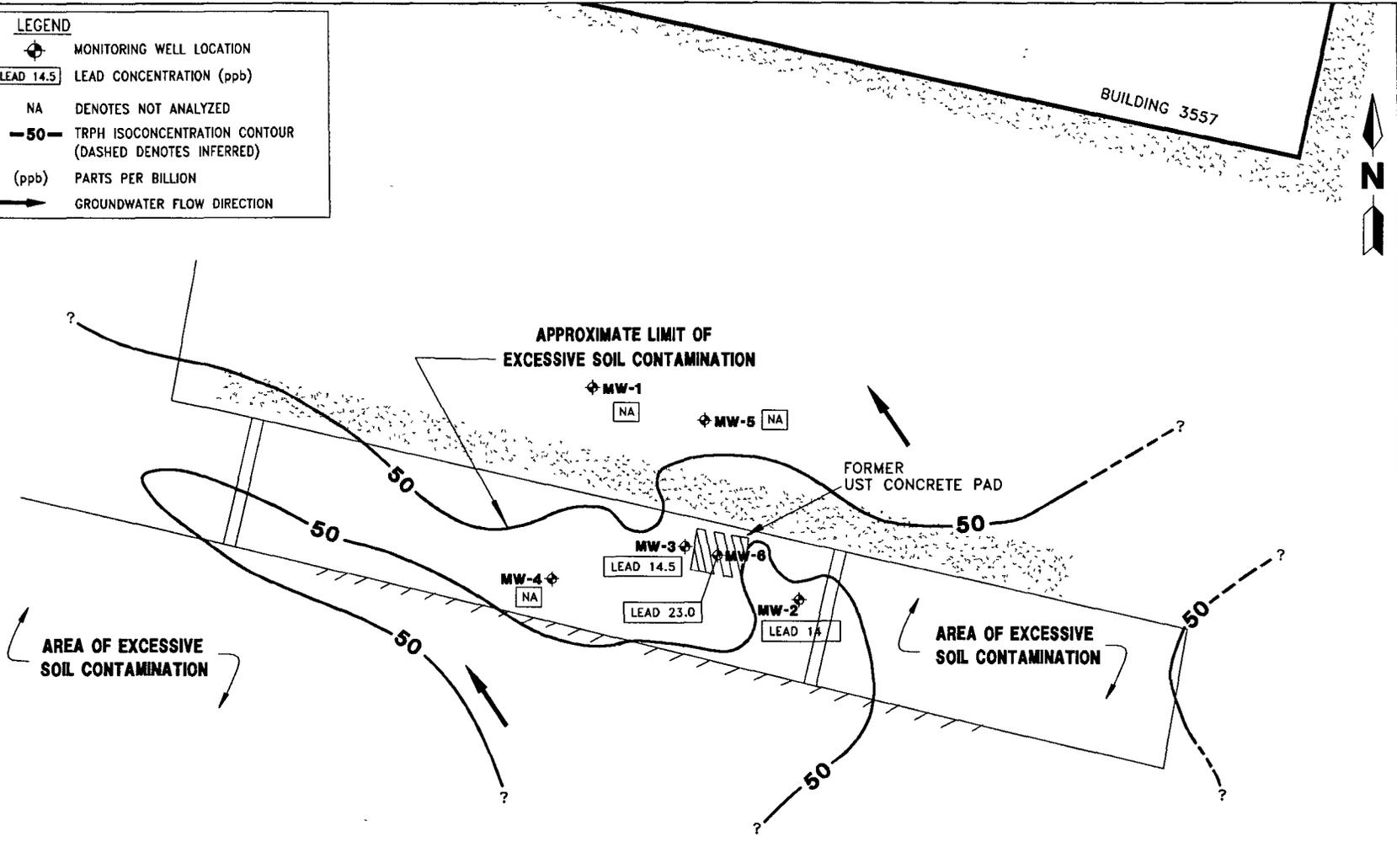
- Asphalt appears to be the most likely source of TRPH in soil outside the immediate UST vicinity and is a possible source of TRPH in soil at the former UST location. A possible source of asphalt in soil is from fill material used during the construction of Chevalier Field.
- Laboratory analyses from the previous and supplemental CAs indicate that groundwater contamination near the former UST is minimal. TRPH in soil does not appear to be affecting groundwater quality near the former UST. The areal extent of lead in groundwater exceeding the State maximum contaminant level of 15 ppb appears to be restricted to the immediate vicinity of the former UST. Because lead was not detected in filtered groundwater samples, the source of lead in groundwater appears to be the result of suspended, lead-bearing particulates in groundwater. The movement of lead-bearing particulates in groundwater is expected to be very localized because of filtration.

Recommendations

Based on the findings and interpretations of the previous CA and the additional soil assessment, a *NFAP* is resubmitted for Site 3557S.

LEGEND

-  MONITORING WELL LOCATION
-  LEAD 14.5 LEAD CONCENTRATION (ppb)
- NA DENOTES NOT ANALYZED
-  50 TRPH ISOCONCENTRATION CONTOUR (DASHED DENOTES INFERRED)
- (ppb) PARTS PER BILLION
-  GROUNDWATER FLOW DIRECTION



EXECUTIVE SUMMARY FIGURE



CONTAMINATION ASSESSMENT REPORT ADDENDUM SITE 3557S

NADEP PENSACOLA PENSACOLA, FLORIDA

ACKNOWLEDGMENTS

In preparing this report, The Underground Storage Tank Section of the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Group at ABB Environmental Services (ABB-ES), Inc., commends the support, assistance, and cooperation provided by the personnel of the Naval Aviation Depot (NADEP) Pensacola, Florida, and Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM).

TABLE OF CONTENTS

Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot
Pensacola, Florida

<u>Section</u>	<u>Title</u>	<u>Page No.</u>
1.0	INTRODUCTION	1-1
2.0	SITE BACKGROUND	2-1
2.1	SITE DESCRIPTION	2-1
2.2	SITE HISTORY	2-1
	2.2.1 Initial Assessment	2-1
	2.2.2 Florida Department of Environmental Protection (FDEP) Request for Supplemental Soil Assessment	2-5
3.0	SUPPLEMENTAL ASSESSMENT	3-1
3.1	SOIL ASSESSMENT	3-1
	3.1.1 Total Petroleum Hydrocarbons (Fingerprint) Analyses . .	3-5
	3.1.2 Asphalt in Soil	3-5
3.2	UNDERGROUND STORAGE TANK (UST) CLOSURE ACTIVITIES	3-7
	3.2.1 Soil Assessment Around the Replacement UST	3-7
	3.2.2 Groundwater Assessment at the Replacement UST	3-7
3.3	ADDITIONAL ASSESSMENT	3-10
	3.3.1 Monitoring Well Installation	3-10
	3.3.2 Water Table Elevation Survey and Groundwater Flow Direction	3-12
	3.3.3 Groundwater Assessment Results	3-12
4.0	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	4-1
4.1	SUMMARY	4-1
4.2	CONCLUSIONS	4-1
4.3	RECOMMENDATIONS	4-2
5.0	PROFESSIONAL REVIEW CERTIFICATION	5-1
6.0	REFERENCES	6-1

APPENDICES

- Appendix A: FDEP Correspondence
- Appendix B: Soil Sample Analytical Data
- Appendix C: Closure Assessment Form
- Appendix D: Groundwater Sample Analytical Data

LIST OF FIGURES

Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot
Pensacola, Florida

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
2-1	Site Location Map	2-2
2-2	Site Plan	2-4
2-3	Groundwater Contamination Distribution Map, February 1992	2-4
3-1	Total Recoverable Petroleum Hydrocarbons (TRPH) in Soil	3-4
3-2	Gas Chromatograms for Soil Samples SB-30a, SB-49, and Motor Oil	3-6
3-3	Gas Chromatogram for Asphalt	3-8
3-4	Volatile Organic Compounds in Soil, Former UST Excavation Area, May 2, 1994	3-9
3-5	Typical Monitoring Well Installation Detail	3-11
3-6	Water Table Elevation Contour Map, June 11, 1994	3-13

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
3-1	Total Recoverable Petroleum Hydrocarbon (TRPH) Concentrations in Soil, December 1992 through June 1994	3-2
3-2	Groundwater Analytical Data, Temporary Well TW-1, May 3, 1994	3-10
3-3	Water Table Elevation Data, June 11, 1994	3-12
3-4	Groundwater Analytical Data, June 10, 1994	3-14

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CA	contamination assessment
CAR	Contamination Assessment Report
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CompQAP	Comprehensive Quality Assurance Plan
CTO	Contract Task Order Number
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDER	Florida Department of Environmental Regulation
FID	flame ionization detector
GC	gas chromatograph
HSWA	Hazardous and Solid Waste Amendments
ID	inside diameter
IRA	Initial Remedial Action
MCL	maximum contaminant level
msl	mean sea level
NA	not analyzed
NADEP	Naval Aviation Depot
NAS	Naval Air Station
NFAP	No Further Action Proposal
ND	not detected
OD	outside diameter
OVA	organic vapor analyzer
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SWDA	Solid Waste Disposal Act
TIC	tentatively identified compound
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
USC&GS	U.S. Coastal and Geodetic Survey
VOAs	volatile organic aromatics
VOCs	volatile organic compounds

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) and submit a contamination assessment report (CAR) for Site 3557S at the Naval Aviation Depot (NADEP), Naval Air Station (NAS), Pensacola, Florida. A CAR was submitted to the Florida Department of Environmental Regulation (FDER) in July 1992 (ABB-ES, 1992). (Note: FDER is now known as the Florida Department of Environmental Protection [FDEP] and is hereafter referred to as FDEP, except when referenced). Upon review of the CAR, FDEP requested a supplemental investigation at the site. This report is an addendum to the original CAR, and presents the findings and conclusions of the supplemental investigation in addition to the findings and conclusions of the CAR.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Site 3557S is located south of Building 3557, which is located in the west part of Chevalier Field near Industrial Road (Figure 2-1). Building 3557 is used as a helicopter cleaning, stripping, and maintenance facility. Cleaning and stripping activities are conducted on the north side of the building. Maintenance activities are conducted on the south side of the building.

Site 3557S is the former location of two 500-gallon waste oil underground storage tanks (USTs). The USTs were located beneath a grassy area approximately 120 feet south of Building 3557 (Figure 2-2).

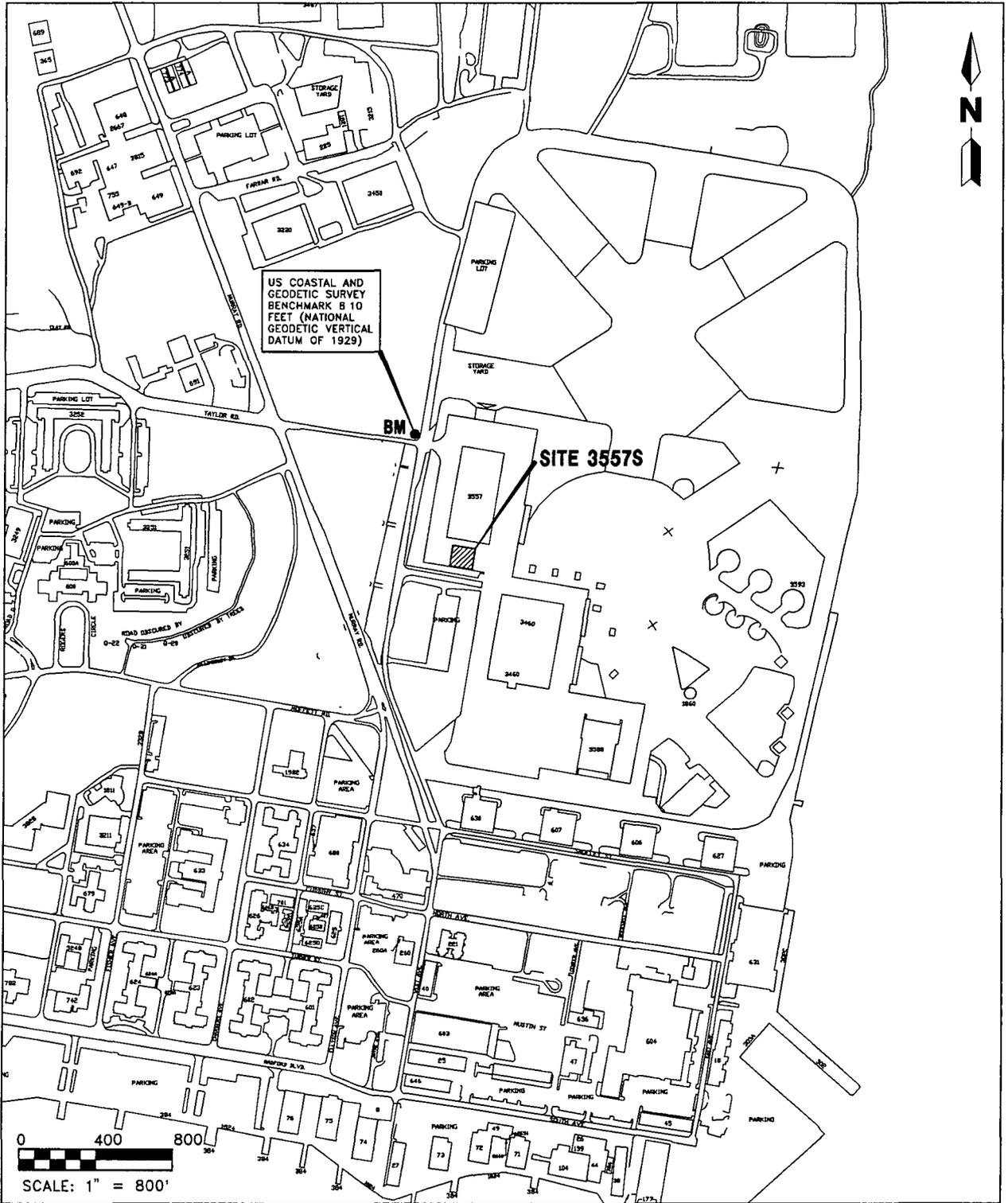
The ground surface at the site is relatively flat. Ground elevations are approximately 5 to 8 feet above mean sea level (msl). Helicopters and associated machinery are transported on the concrete area north of the USTs. The site is bordered on the south by an asphalt-covered parking lot.

2.2 SITE HISTORY. The USTs were removed from the site during a tank removal and installation program conducted by the Navy in 1989 and 1990. After tank removal, a 500-gallon replacement UST was installed in the same location as the former USTs. The replacement UST was also used to store waste oil. Excessively petroleum-contaminated soil was identified by laboratory analyses during tank removal activities. From January through February 1992, ABB-ES initiated a CA to investigate the extent of excessive soil contamination and possible groundwater contamination. The 500-gallon, replacement UST was removed from the site on May 2, 1994.

2.2.1 Initial Assessment During the CA five soil borings (SB-1 through SB-5) were advanced near the former USTs location, and monitoring wells MW-1 through MW-5 were installed in soil borings SB-1 through SB-5, respectively (Figure 2-3).

Soil samples were collected from each soil boring and analyzed for volatile organic compounds (VOCs) by organic vapor analyzer (OVA) headspace techniques, and for the metals arsenic, cadmium, chromium, and lead by an analytical laboratory. Groundwater samples were collected from monitoring wells and were analyzed for used oil constituents, as outlined in Chapter 17-770, Florida Administrative Code (FAC). The results of the CA are summarized below.

- Soil encountered at the site is typically porous, unconsolidated, fine-grained to medium-grained quartz sand.
- Groundwater was encountered approximately 2 to 5 feet below land surface (bls) under water table conditions and is part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991). This zone is classified as a G-II groundwater source. Groundwater flow direction varies from north to west, but is predominantly to the west.
- VOCs in soil were not detected by OVA headspace techniques. Lead was detected in soil, but at concentrations below State standards for clean soil (FDER, 1994).



**FIGURE 2-1
SITE LOCATION MAP**

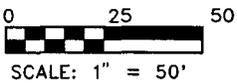
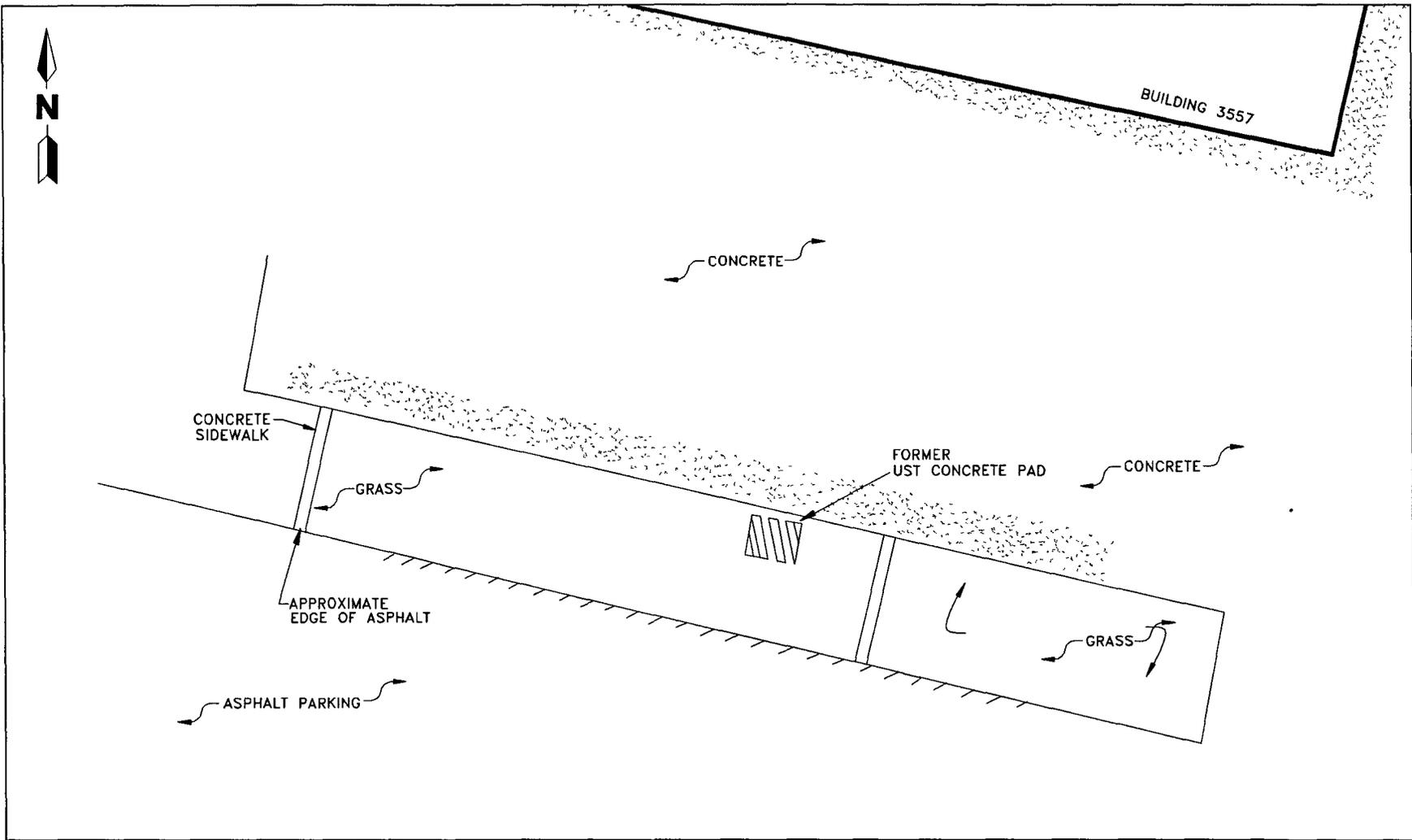


**CONTAMINATION ASSESSMENT
REPORT ADDENDUM
SITE 3557S**

**NAEP PENSACOLA
PENSACOLA, FLORIDA**

H:\PENSACOLA\SITE-MAP\WDW\07-14-94

3557S ADD
MVL 07 94



**FIGURE 2-2
SITE PLAN**



**CONTAMINATION
ASSESSMENT REPORT ADDENDUM
SITE 3557S**

**NADEP PENSACOLA
PENSACOLA, FLORIDA**

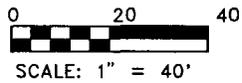
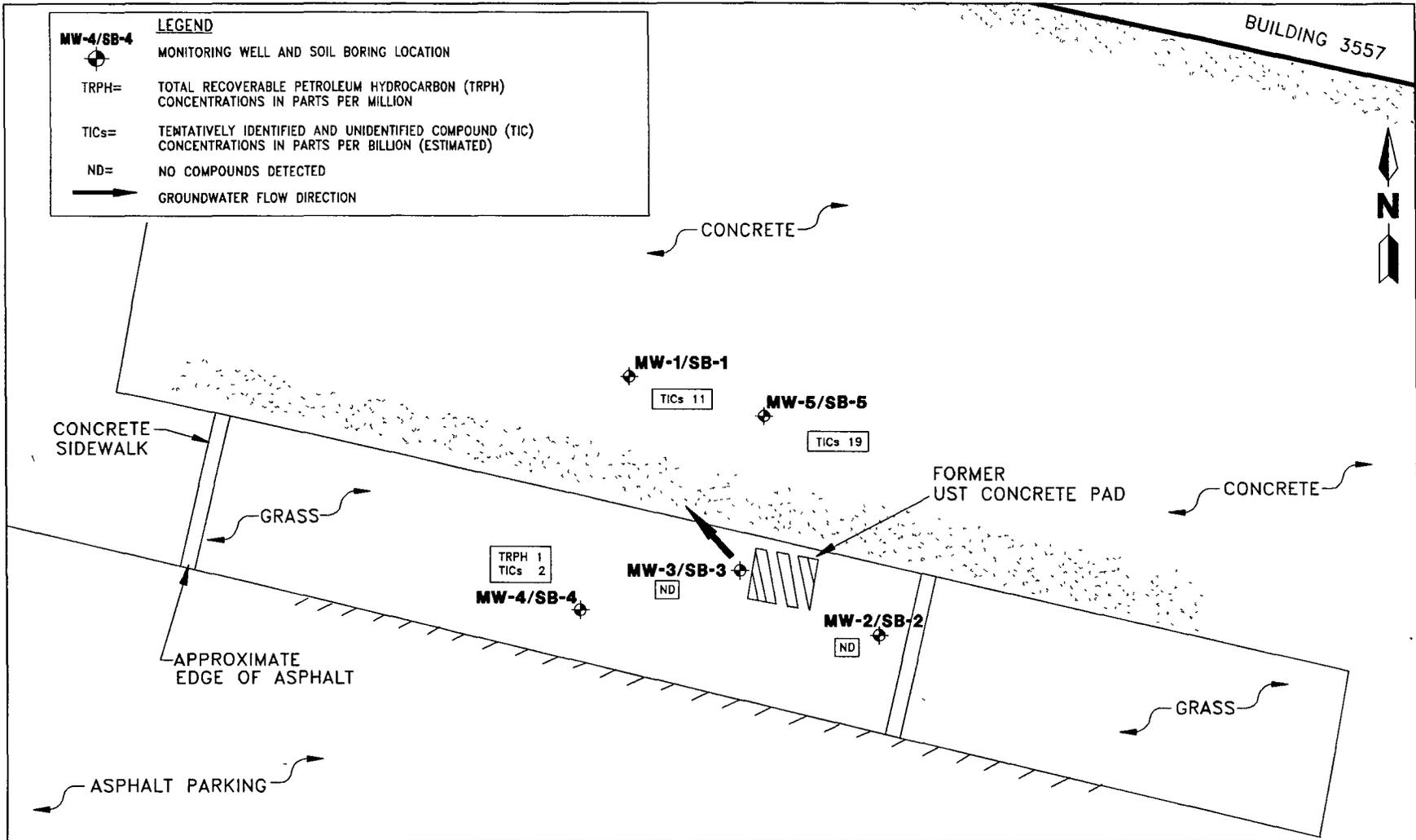


FIGURE 2-3
GROUNDWATER CONTAMINATION
DISTRIBUTION MAP,
FEBRUARY 1992



CONTAMINATION
ASSESSMENT REPORT ADDENDUM
SITE 3557S

NADEP PENSACOLA
PENSACOLA, FLORIDA

- Total recoverable petroleum hydrocarbons (TRPH) were detected in only the sample from downgradient monitoring well MW-4 (Figure 2-3). The TRPH concentration of 1 part per million (ppm) is below the State target level of 5 ppm (Chapter 17-770, FAC).
- Three tentatively identified compounds (TICs), 1-ethyl-2-methyl benzene, 1-methyl-3-(1-methylethyl)benzene, and 1-hexene, and two unidentified compounds were also detected in groundwater samples from monitoring wells MW-1, MW-4, and MW-5 (Figure 2-3). Estimated concentrations of the TICs and unidentified compounds did not exceed 11 parts per billion (ppb). The TICs appear to be petroleum-related or petroleum breakdown products (ABB-ES, 1992).
- No contaminants were detected in samples collected from monitoring wells MW-2 and MW-3.
- There are no potable wells within 0.25 mile of the site (ABB-ES, 1992).

A *No Further Action Proposal (NFAP)* was submitted in the CAR.

2.2.2 Florida Department of Environmental Protection (FDEP) Request for Supplemental Soil Assessment Upon review of the CAR, FDEP requested documentation regarding initial remedial action (IRA) activities performed during the tank removal and installation program. Because much of this information was not available, and because it was subsequently discovered that petroleum-contaminated soils had been returned to the UST excavation during IRA activities, FDEP requested that a supplemental soil assessment be conducted near the replacement UST (see Appendix A, FDEP Correspondence, FDEP memorandum from Jorge Caspary to Eric Nuzie, dated September 14, 1992).

3.0 SUPPLEMENTAL ASSESSMENT

The supplemental CA was conducted during various phases from December 1992 through June 1994. Part of the supplemental CA was conducted concurrently with and subsequent to May 2, 1994, UST closure activities performed under the Base Realignment and Closure Initiative. This CAR Addendum addresses the concerns raised by FDEP and incorporates the findings and conclusions of the supplemental CA and UST closure with findings and conclusions of the CAR (ABB-ES, 1992).

Additional supplemental assessment activities included the following:

- soil assessment around the UST location,
- UST removal,
- additional monitoring well installation and groundwater assessment, and
- water table elevation measurements.

3.1 SOIL ASSESSMENT. An additional 44 borings (SB-6 through SB-49) were advanced at the site. Borings were advanced by hand auger in the grassy area between the parking lot and concrete pavement. Soil borings in paved areas were advanced by a drill rig. A soil sample was collected from each boring and analyzed for VOCs by OVA headspace techniques and for TRPH using USEPA Method 9073. Soil samples were collected from 1.5 feet to 4 feet bls, depending on the depth to the water table. TRPH concentrations and depths of sample collection for each boring are presented in Table 3-1. Soil sample TRPH laboratory analyses are presented in Appendix B, Soil Sample Analytical Data. Soil boring locations with corresponding TRPH concentrations are presented in Figure 3-1.

OVA measurements of soil samples collected in the vicinity of the former UST (SB-6 through SB-9) were less than 1 ppm. No discoloration or odor was observed in any soil sample. Because of this, and because soil samples were analyzed for TRPH, many soil samples from soil borings SB-11 through SB-49 were not analyzed for VOCs. Although OVA measurements of soil samples from soil borings SB-6 through SB-9 were no greater than 1 ppm, TRPH concentrations were relatively high, ranging from 19 ppm to 680 ppm. There is little correlation between OVA measurements and TRPH concentrations throughout the site.

TRPH concentrations vary from less than 5 ppm to 1,720 ppm (see Figure 3-1). The highest TRPH concentrations appear to be randomly dispersed across the site. The area of excessively contaminated soil, where TRPH concentrations exceed the State mandatory cleanup level of 50 ppm, extends over most of the grassy area between the concrete apron and asphalt parking lot. The areal extent of excessively contaminated soil has not been fully assessed northeast of the site, underneath the concrete apron, or underneath the asphalt parking lot south of the site. Excessively contaminated soil does not, however, appear to be present north or south of the UST.

**Table 3-1
Total Recoverable Petroleum Hydrocarbon (TRPH)
Concentrations in Soil,
December 1992 through June 1994**

Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot
Pensacola, Florida

Boring Designation	Depth (feet bls)	TRPH Concentration (ppm)
SB6	1.5	NA
	3	110
SB7	1.5	NA
	3	19
SB8	1.5	NA
	2.5	140
SB9	1.5	NA
	3	680
SB10	Aborted	--
SB11	3	200
SB12	3	210
SB13	3	26
SB14	3	50
SB15	3	1,600
SB16	3	320
SB17	3	130
SB18	2 to 3	<5
SB19	2 to 3	290
SB20	2 to 3	150
SB21	2 to 3	<5
SB22	2 to 3	70
SB23	2 to 3	<5
SB-24	3	56
SB-25	2.5	10
SB-26	2	46
SB-27	2	<5
SB-28	2	<5
SB-29	4	170
SB-30	3	360
See notes at end of table.		

Table 3-1 (Continued)
Total Recoverable Petroleum Hydrocarbon (TRPH)
Concentrations in Soil,
December 1992 through June 1994

Second Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot
Pensacola, Florida

Boring Designation	Depth (feet bls)	TRPH Concentration (ppm)
SB-30A	1.5	392
SB-31	3.5	320
SB-32	1	50
SB-33	1.5	200
SB-33A	1.5	81
SB-34	1 to 3	26
SB-35	1 to 3	31
SB-36	1 to 3	6
SB-37	1 to 3	<6.1
SB-38	1 to 3	<6.4
SB-39	1 to 3	<6.6
SB-40	0 to 2	22
SB-41	0 to 2	299
SB-42	0 to 2	1,720
SB-43	0 to 2	1,390
SB-44	0 to 2	<6.7
SB-45	0 to 2	442
SB-46	1 to 3	25
SB-47	1 to 3	910
SB-48	1 to 3	100
SB-49	2 to 2.5	754

Notes: bls = below land surface
NM = no measurement recorded
NA = not analyzed

LEGEND

- ⊕ MONITORING WELL LOCATION
- SOIL BORING LOCATION
- (3 0) TRPH CONCENTRATION (ppm)
- NA= DENOTES NOT ANALYZED
- 50— TRPH ISOCONCENTRATION CONTOUR (ppm)
(DASHED DENOTES INFERRED)
- (ppm) PARTS PER MILLION
- TRPH= TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
- TPH= TOTAL PETROLEUM HYDROCARBONS
- TPH=360 TPH CONCENTRATION (ppm)

Note: TPH analyzes performed for samples SB-30 and SB-49.
(See subsection 3.1.1)

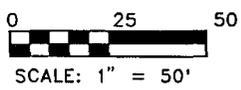
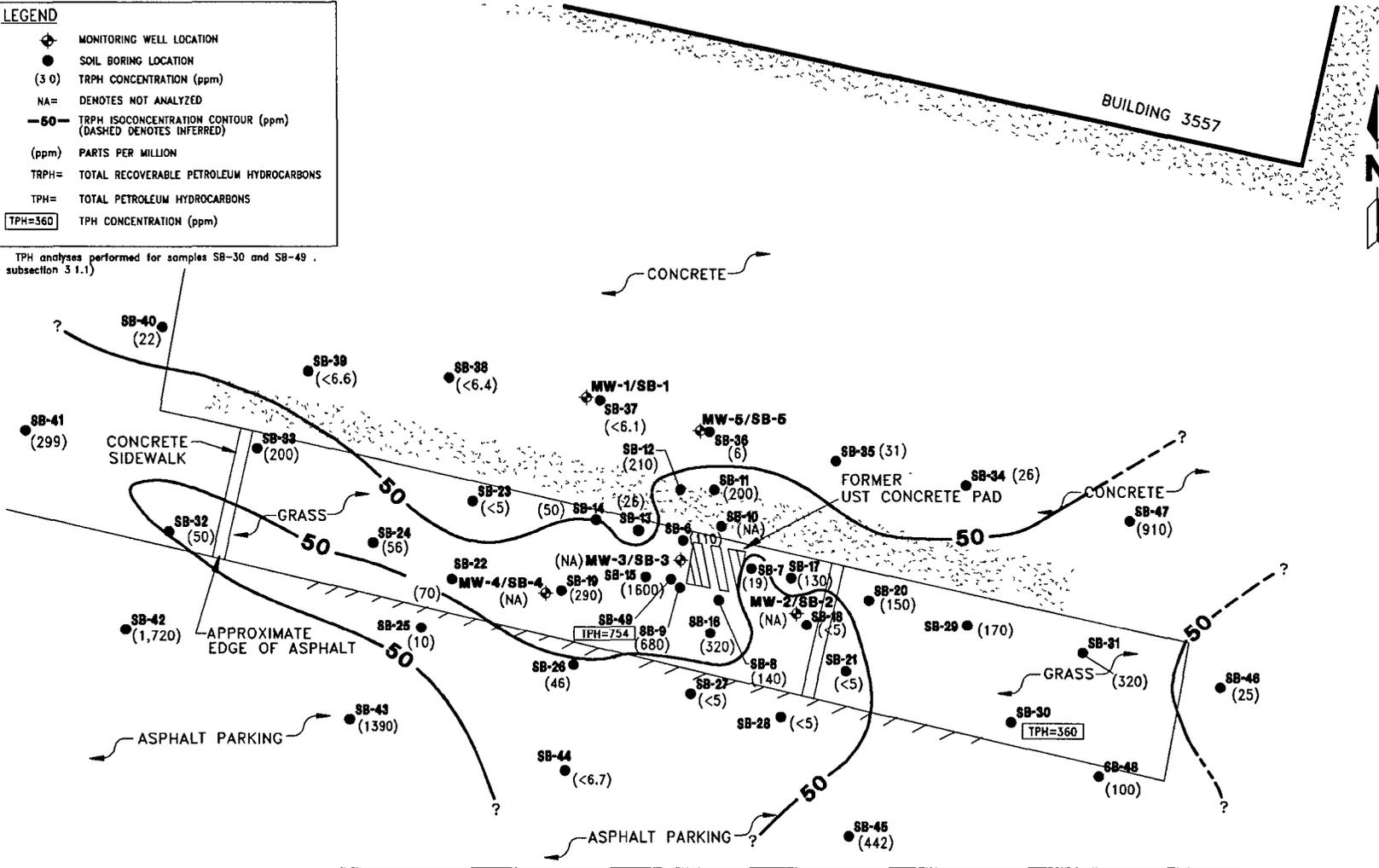


FIGURE 3-1
TOTAL RECOVERABLE PETROLEUM
HYDROCARBONS (TRPH) IN SOIL



CONTAMINATION
ASSESSMENT REPORT ADDENDUM
SITE 3557S

NADEP PENSACOLA
PENSACOLA, FLORIDA

There does not appear to be a correlation between TRPH concentrations and proximity to the former UST. For example, the highest TRPH concentration (1,720 ppm) was from a sample collected from SB-42, which is located approximately 180 feet west of the former UST. TRPH concentrations in soil were also high in samples located upgradient of the UST (Figure 3-1). The source of TRPH in soil upgradient of the UST area is not easily explained by a release from the former UST.

3.1.1 Total Petroleum Hydrocarbons (Fingerprint) Analyses Two soil samples with high TRPH concentrations, SB-30 and SB-49, were selected for total petroleum hydrocarbons (TPH) analysis to assess the source of the TRPH in soil. Soil sample SB-49 was collected next to the replacement UST, and soil sample SB-30A was collected next to soil boring SB-30, located approximately 95 feet southeast (upgradient) of the former UST location.

The samples were analyzed for TPH by Enseco Laboratories in Tampa, Florida. The analytical method used for TPH analysis is gas chromatography (GC) with flame ionization detection (FID). Petroleum hydrocarbon compounds are identified as peaks on a chromatogram. All peaks are integrated into a single TPH value. Soil sample chromatograms are compared to patterns of known petroleum products (e.g., used oil and asphalt), which are used as a "fingerprint" to tentatively identify the type of petroleum product in the sample. Peaks corresponding to short-chain hydrocarbon compounds appear in the early stages of the chromatogram run; long-chain petroleum compounds appear later.

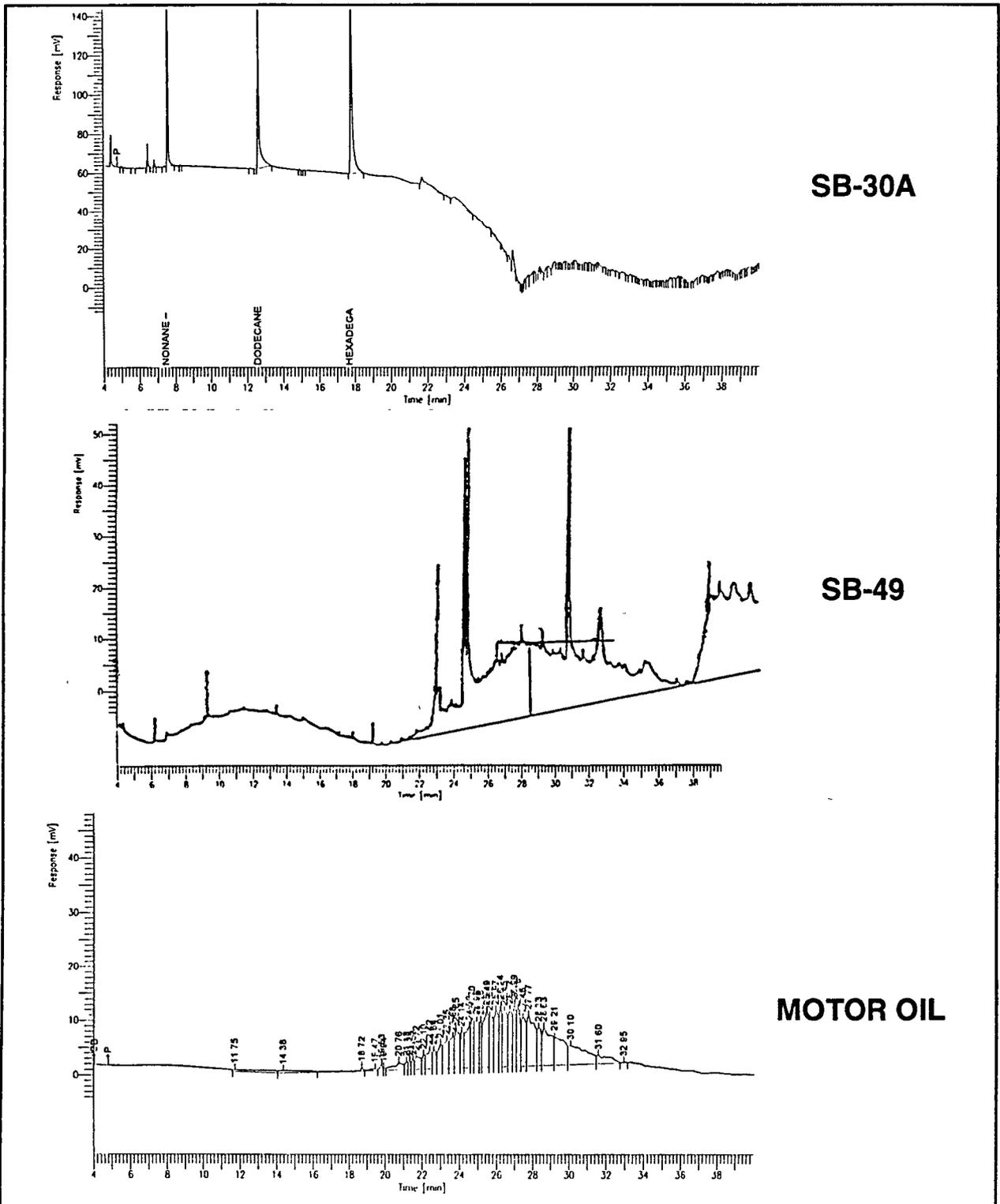
Chromatograms for samples SB-30A and SB-49 are shown in Figures 3-2. Analyses were performed for approximately 40 minutes. (Note: the nonane, dodecane, and hexadecane spikes at 7.5, 12.5, and 17.7 minutes are laboratory spikes and are not indications of the presence of these compounds in the sample.)

The TPH concentration in sample SB-49 is 28 ppm, which is much less than the TRPH concentration of 754 ppm. The chromatogram for sample SB-49 resembles one for motor oil (Figure 3-2), which suggests that TRPH in soil in the immediate UST vicinity is at least partly attributable to a release from the waste oil UST.

TPH were not detected in sample SB-30A (TPH <3 ppm), which had a TRPH concentration of 392 ppm. Because TPH were not detected, the source of TRPH in sample SB-30A appears to be the result of long-chain hydrocarbon molecules with retention times greater than 40 minutes. Because waste oil constituents are expected to appear during the first 40 minutes of GC analysis, the source of TRPH in sample SB-30A cannot be directly attributed to the waste oil UST.

3.1.2 Asphalt in Soil A possible source of TRPH in soil is asphalt, which was visible in small quantities in soil samples at the site. The size of the asphalt pieces was typically very fine sand to fine gravel. Typically, a large percentage of asphalt is composed of molecules above the C₃₈ range (Enseco, 1993). Because much of the material is heavier than C₃₈, quantification of asphalt is low during standard GC runs. Also, higher molecular weight hydrocarbons condense during injection into the GC, resulting in a poor response on the chromatogram (Enseco, 1993).

The low TPH response of asphalt was verified during this assessment. An asphalt sample was collected by Enseco Laboratories from a highway in Tampa, Florida.



TRPH was analyzed by USEPA Method 418.1 and TPH were analyzed by GC/FID. The TRPH concentration in the asphalt sample was 67,000 ppm. Because of the high TRPH concentration, the TPH extraction was performed as a waste dilution (1 gram of asphalt was diluted with 10 milliliters of solvent). The extraction was performed for approximately 120 minutes. The resulting chromatogram is shown in Figure 3-3. TPH were not detected during the extraction. The apparent peak from approximately 25 to 35 minutes is a methodology artifact and not an indication of the presence of petroleum constituents (Enseco, 1994; personal communication). The low TPH response indicates that samples with high TRPH concentrations due to asphalt have low to no reportable TPH by GC/FID.

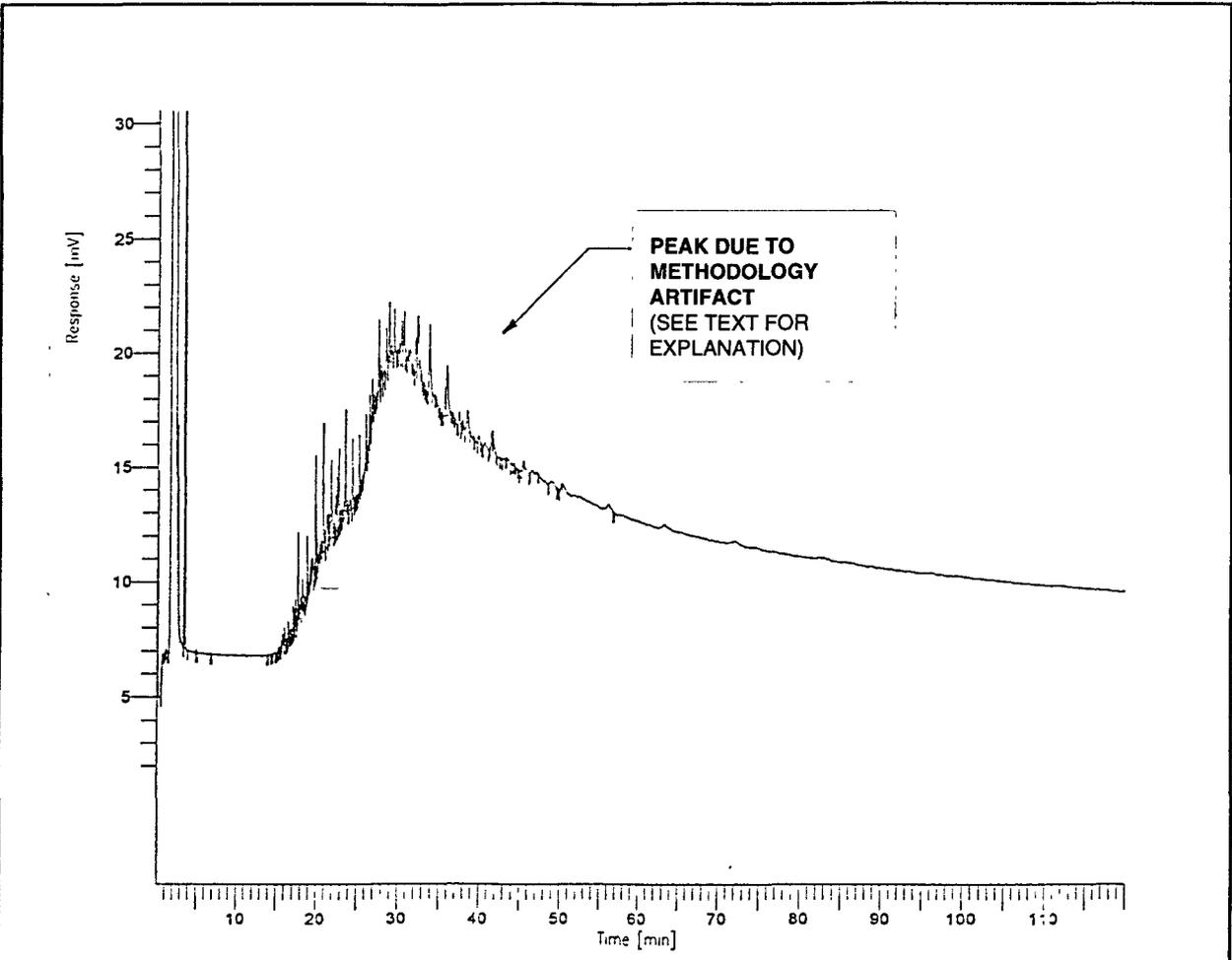
In summary, fingerprint analyses indicate that although waste oil may be responsible for the high TRPH concentrations near the former UST, TRPH concentrations in soil outside the UST vicinity cannot be directly attributed to a release from the UST. Asphalt appears to be the most plausible source of TRPH in soil because asphalt was visually observed in soil samples, the low TPH response is consistent with asphalt-bearing samples having high TRPH concentrations, and no other potential sources were identified.

3.2 UNDERGROUND STORAGE TANK (UST) CLOSURE ACTIVITIES. UST closure activities involved the removal of the replacement UST and soil and groundwater assessment at the UST location. Because the former UST location approximately coincides with the location of the replacement UST (ABB-ES, 1993), the soil assessment around the former UST location requested by FDEP was performed during UST closure activities. A *Closure Assessment Form* summarizing UST closure activities was submitted by facility personnel to the district FDEP office. This form is attached in Appendix C, Closure Assessment Form. The replacement UST was removed from the site in May 1994. Soil was excavated to the depth of the water table, which was encountered approximately 5 feet bls.

3.2.1 Soil Assessment Around the Replacement UST Excavated soil was monitored by OVA headspace techniques. Four confirmatory soil samples were collected around the perimeter of the excavated area at a depth of 4 feet bls (Figure 3-4). No excessively petroleum-contaminated soil was detected by OVA headspace techniques or visual inspection during the excavation. OVA measurements ranged from less than 1 ppm to 6 ppm. After UST removal, excavated soil was returned to the excavation.

3.2.2 Groundwater Assessment at the Replacement UST A temporary well (TW-1) was installed in the interior of the excavation (Figure 3-4) to satisfy UST closure assessment requirements outlined by FDEP (1994). A groundwater sample was collected on May 3, 1994, and was analyzed for used oil constituents by an analytical laboratory. Groundwater analytical results are attached in Appendix D, Groundwater Sample Analytical Data, and are summarized in Table 3-2.

Cadmium, chromium, and lead concentrations exceed State maximum contaminant levels (MCLs) (Chapter 17-550, FAC). The compound 3,5,5-trimethyl 1,2,3-propane hexadecanoic acid was tentatively identified at a concentration of 15 ppb. Two unidentified compounds were detected at concentrations of 11 ppb each. All other VOCs and semivolatile compounds were reported as below detection limits.

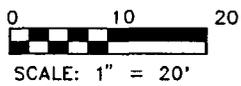
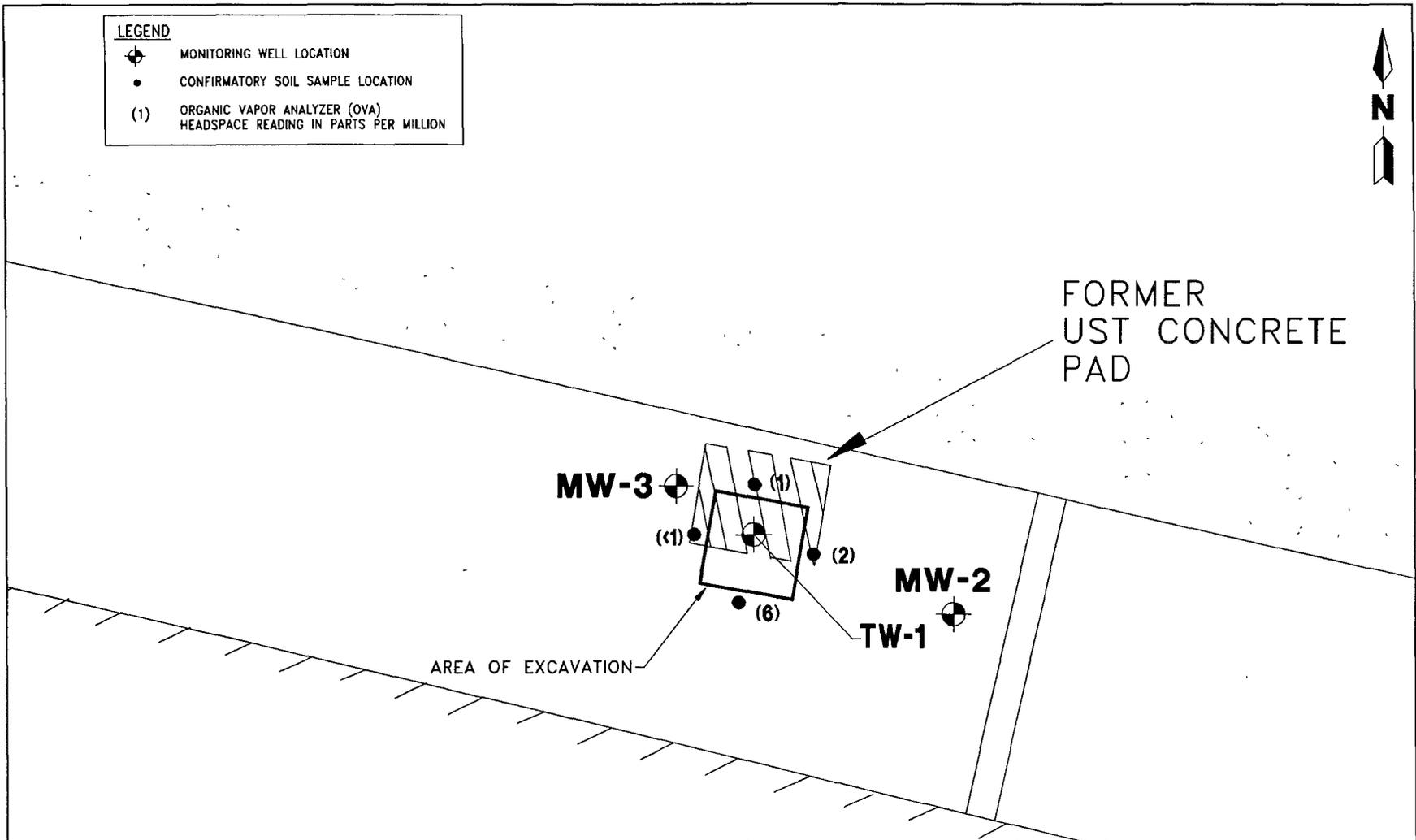


ASPHALT

<p>FIGURE 3-3</p> <p>GAS CHROMATOGRAM FOR ASPHALT</p>	 <p>CONTAMINATION ASSESSMENT REPORT ADDENDUM SITE 3557S</p> <p>NADEP PENSACOLA PENSACOLA, FLORIDA</p>
---	---

LEGEND

-  MONITORING WELL LOCATION
-  CONFIRMATORY SOIL SAMPLE LOCATION
-  (1) ORGANIC VAPOR ANALYZER (OVA)
HEADSPACE READING IN PARTS PER MILLION



H/PENSCOLA/CAR3557S/WDW/07-14-94

FIGURE 3-4
VOLATILE ORGANIC COMPOUNDS IN SOIL,
FORMER UST EXCAVATION AREA
MAY 2, 1994



CONTAMINATION
ASSESSMENT REPORT ADDENDUM
SITE 3557S

NADEP PENSACOLA
PENSACOLA, FLORIDA

**Table 3-2
Groundwater Analytical Data,
Temporary Well TW-1,
May 3, 1994**

Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot,
Pensacola, Florida

Compound	Applied Standard	Concentration
TRPH	¹ 5	2.0
Arsenic	² 50	14.5
Cadmium	² 5	36.8
Chromium	² 100	261
Lead	² 15	1090
Tentatively Identified Compounds		
3,5,5-trimethyl-1,2,3-propanehexadecanoic acid		15
Unknowns (2)		11

¹ State target level for Class G-II groundwater (Chapter 17-770, Florida Administrative Code [FAC]).

² Maximum contaminant level (Chapter 17-550, FAC)

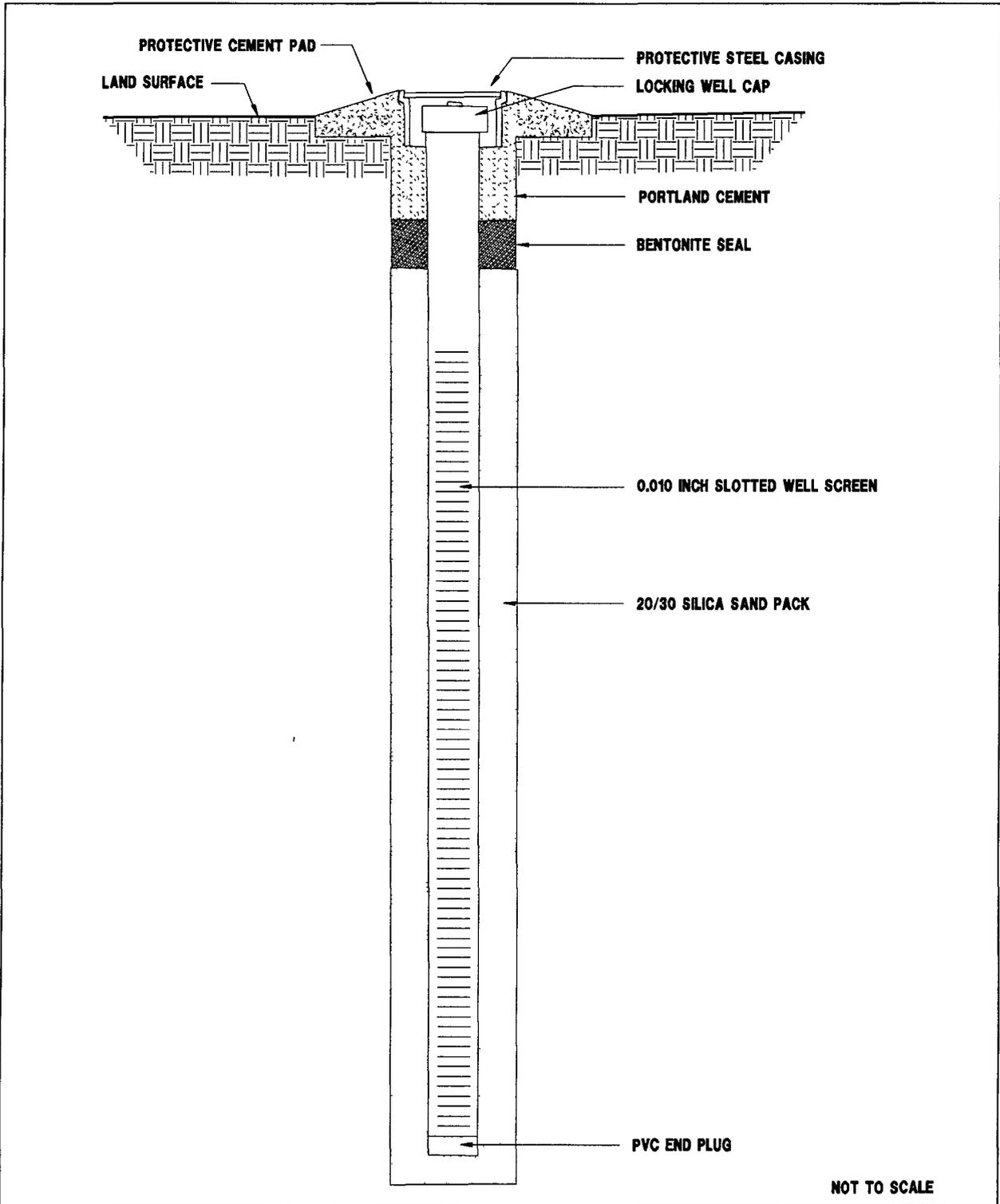
Notes: TRPH = total recoverable petroleum hydrocarbons

Concentrations are in parts per billion except TRPH, which is reported in parts per million.

Metals samples are unfiltered.

3.3 ADDITIONAL ASSESSMENT. Because metals concentrations in the sample from temporary well TW-1 exceeded State MCLs, additional site assessment was required pursuant to Chapter 17-770, FAC. The additional assessment was conducted in June 1994. One permanent monitoring well (MW-6) was installed at the former location of TW-1. Groundwater samples were collected on June 10, 1994, from monitoring wells MW-6, MW-2, and MW-3. The samples were analyzed by an analytical laboratory for TRPH and arsenic, cadmium, chromium, and lead. Both filtered and non-filtered metals samples were collected from each monitoring well.

3.3.1 Monitoring Well Installation The borehole for monitoring well MW-6 was advanced with a truck-mounted drill rig using rotary drilling techniques with 9-inch outside diameter (OD), hollow-stemmed augers. The well was installed to 12 feet bls. The well was constructed of 2-inch inside diameter (ID), schedule 40, polyvinyl chloride (PVC) casing with flush-threaded joints and contains 10 feet of 0.010-inch machine-slotted screen. The screen extends over an interval of 2 to 12 feet bls. PVC well casing extends from the top of the screen to land surface. A 20/30 grade silica sand filter pack was placed in the annular space to approximately 1-foot above the top of the screened interval. A 6-inch thick bentonite seal was placed on top of the filter pack. The remaining annular space was grouted to surface with a neat cement grout. A protective traffic-bearing vault was installed to complete the well. The monitoring well is equipped with a locking well cap and a padlock. Monitoring well installation details are illustrated in Figure 3-5.



**FIGURE 3-5
TYPICAL MONITORING WELL
INSTALLATION DETAIL**



**CONTAMINATION ASSESSMENT
REPORT ADDENDUM
SITE 3557S**

**NADEP PENSACOLA
PENSACOLA, FLORIDA**

PENSACOLA/WE/WDW/07-14-94

3557S ADD
MVL 07 94

3.3.2 Water Table Elevation Survey and Groundwater Flow Direction Groundwater elevations were recorded on June 11, 1994. Top of casing, depth to groundwater, and water table elevations are presented in Table 3-3. Total depths and screened intervals are also included. Top of casing elevations are referenced to a U.S. Coastal and Geodetic Survey (USC&GS) benchmark near the intersection of Taylor Road and Industrial Road, approximately 500 feet northwest of the site (see Figure 2-1). Water table elevations indicate a northwesterly groundwater flow direction (Figure 3-6). Previous groundwater elevation measurements indicated a north to west groundwater flow direction (ABB-ES, 1992).

Table 3-3 Water Table Elevation Data, June 11, 1994					
Second Contamination Assessment Report Addendum Site 3557S, Naval Aviation Depot Pensacola, Florida					
				June 11, 1994	
Monitoring Well Number	Total Well Depth (feet)	Screened Interval (feet bls)	Top of Casing Elevation ¹ (feet)	Depth to Groundwater (from TOC) (feet)	Relative Groundwater Elevation (feet)
MW-1	13	3 to 13	6.84	4.06	2.78
MW-2	13	3 to 13	6.70	3.83	2.87
MW-3	13	3 to 13	6.54	3.68	2.86
MW-4	12	2 to 12	5.47	2.64	2.83
MW-5	13	3 to 13	7.30	4.50	2.80
MW-6	12	2 to 12	6.71	3.85	2.86

¹ All elevations referenced to U.S. Coastal and Geodetic Survey (USC&GS) benchmark (8.10 feet above mean sea level).

Notes: TOC = top of casing
bls = below land surface

3.3.3 Groundwater Assessment Results Groundwater analytical laboratory results for the samples collected June 10, 1994, are presented in Appendix D, Groundwater Sample Analytical Data, and are summarized in Table 3-4. TRPH concentrations were below detection limits for all samples. Lead was the only metal detected, at concentrations ranging from 14.0 ppb in the unfiltered sample from monitoring well MW-2 to 23.0 ppb in the unfiltered sample from monitoring well MW-6. Metals were not detected in the filtered samples. Because metals were detected only in unfiltered samples, their presence in groundwater is probably the result of metal-bearing particulates suspended in groundwater at the time of sample collection. Filtration, resulting in the removal of suspended particles in groundwater, is typically observed in unconsolidated, porous sediments; therefore, transportation of particulates in groundwater is expected to be very localized.

LEGEND

-  MONITORING WELL LOCATION
-  (2.86) WATER TABLE ELEVATION IN FEET
-  2.85 EQUIPOTENTIAL LINE
CONTOUR INTERVAL = 0.05 FOOT
(DASHED DENOTES INFERRED)
-  GROUNDWATER FLOW DIRECTION

Note: All elevations referenced to US Coastal and Geodetic survey benchmark (8.10 feet above mean sea level)

BUILDING 3557

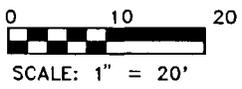
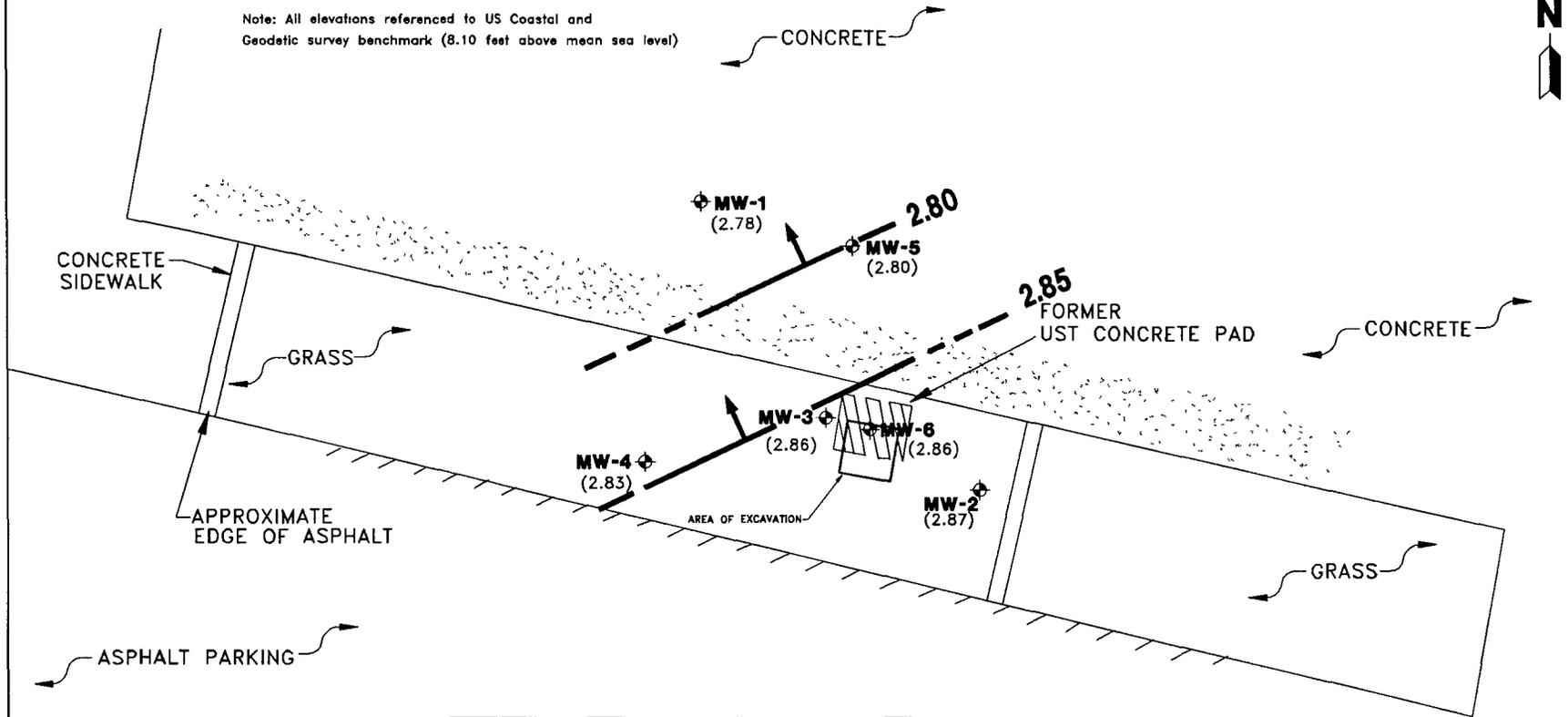


FIGURE 3-6
WATER TABLE ELEVATION
CONTOUR MAP,
JUNE 11, 1994



CONTAMINATION
ASSESSMENT REPORT ADDENDUM
SITE 3557S

NADEP PENSACOLA
PENSACOLA, FLORIDA

**Table 3-4
Groundwater Analytical Data,
June 10, 1994**

Contamination Assessment Report Addendum
Site 3557S, Naval Aviation Depot,
Pensacola, Florida

Compound	Standard	MW2	MW3	MW6
TRPH	¹ 5	<1.0	<1.0	<1.0
Arsenic	² 50	<5.0	<5.0	<5.0
Cadmium	² 5	<5.0	<5.0	<5.0
Chromium	² 100	<50.0	<50.0	<50.0
Lead	² 15	14	14.5	23.0

¹ State target level for Class G-II groundwater (Chapter 17-770, Florida Administrative Code [FAC]).
² Maximum contaminant level (Chapter 17-550, FAC).

Notes: Concentrations are in parts per billion except TRPH, which are reported in parts per million
Reported metals concentrations are from unfiltered samples. Metals were not detected in
filtered samples.
TRPH = total recoverable petroleum hydrocarbons.

4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

4.1 SUMMARY. Based on the results of the supplemental field investigation and the previous investigative results, the following is a summary of conditions observed at the site.

- Six monitoring wells were installed and 49 soil borings were advanced to assess soil and groundwater contamination near the 500-gallon replacement UST.
- Sediments are typically porous, unconsolidated, fine-grained to medium-grained quartz sand. These sediments are part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991). The surficial zone is classified as a Class G-II groundwater source.
- Groundwater was encountered approximately 2 to 5 feet bls. Groundwater flow direction varies from north to west.
- The replacement UST was removed from the site during this investigation on May 2, 1994.
- Total metals concentrations in soil are below State standards for clean soil.
- TRPH concentrations in soil varied from less than 5 ppm to 1,720 ppm. Excessively contaminated soil extends over a large part of the site. The area of excessively contaminated soil, where TRPH concentrations exceed the State mandatory cleanup level of 50 ppm, extends over most of the grassy area between the concrete apron and asphalt parking lot. Excessively contaminated soil was also found northeast of the site, underneath the concrete apron, and in the asphalt parking lot south of the site. The source and extent of excessively contaminated soil underneath the concrete apron or in the asphalt parking lot has not been fully assessed.
- The TPH concentration for sample SB-49 was 28 ppm. The corresponding chromatogram resembles that of motor oil. TPH were not detected in sample SB-30A.
- Lead was the only contaminant detected in unfiltered groundwater samples, at concentrations ranging from 14.0 ppb in the sample from monitoring well MW-2 to 23.0 ppb in the sample from monitoring well MW-6. No metals were detected in filtered groundwater samples.
- There are no potable wells within 0.25 mile of the site (ABB-ES, 1992)

4.2 CONCLUSIONS. The following conclusions are based on the findings of the supplemental assessment and existing site conditions.

- Groundwater contamination at the site appears to be minimal. Although the lead concentration in the unfiltered sample from monitoring well MW-6 was above the State Drinking Water Standard of 15 ppb (Chapter 17-770, FAC), it was below the State target level of 50 ppb for Class G-II groundwater (Chapter 17-550, FAC). Because metals were detected only in unfiltered

samples, their presence in groundwater is probably the result of metal-bearing particulates suspended in groundwater at the time of sample collection. The movement of metal-bearing particulates in groundwater is expected to be very localized because of filtration.

- High TRPH concentrations in soil samples across the site do not appear to be affecting the groundwater quality.
- Asphalt appears to be the most plausible source of TRPH in soil in the vicinity of soil boring SB-30A. High TRPH concentrations in other areas of the site may also be attributable to asphalt.

4.3 RECOMMENDATIONS. Based on the findings and interpretations of the previous contamination assessment and the additional soil assessment, a *No Further Action Proposal (NFAP)* is recommended for Site 3557S.

5.0 PROFESSIONAL REVIEW CERTIFICATION

The CA contained in this report was prepared using sound hydrogeologic principles and judgment. This CA is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This CAR Addendum was developed for the waste oil tanks located at Site 3557S at the Naval Aviation Depot, Naval Air Station in Pensacola, Florida, and should not be construed to apply to any other site.

Roger Durham
Professional Geologist
P.G. No. 001127

Date

6.0 REFERENCES

- ABB Environmental Services, Inc., 1992, Contamination Assessment Report, Site 3557S, Naval Aviation Depot, Naval Air Station, Pensacola, Florida: prepared for Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina.
- Enseco, 1993, Petroleum hydrocarbon fingerprinting, approaches to the qualitative identification of gas chromatographic patterns: prepared by A. Humason, unpublished study.
- Florida Department of Environmental Regulation, 1989, Groundwater guidance concentrations: compiled by R. Merchant, Division of Water Facilities.
- Florida Department of Environmental Regulation, 1994, Guidelines for assessment and remediation of petroleum contaminated soils, revised: Division of Waste Management.
- Florida Department of Transportation, 1982, Florida official transportation map: 1 sheet.
- Roaza, H.P, Pratt, T.R., Richards, C.J., Johnson, J.L., and Wagner, J.R., 1991, Conceptual model of the sand-and-gravel aquifer, Escambia, County, Florida: Northwest Florida Water Management District Water Resources Special Report 91-6, 125 p.
- U.S. Geological Survey, 1970, Fort Barrancas Quadrangle: 7.5-minute topographic series.

APPENDIX A
FDEP CORRESPONDENCE



State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: _____	Location _____
To: _____	Location _____
To: _____	Location _____
From: _____	Date: _____

Interoffice Memorandum

TO: Eric S. Nuzie, Federal Facilities Coordinator
Bureau of Waste Cleanup

THROUGH: Dr. James J. Crane, PGIII/Administrator
Technical Review Section *gjl*

FROM: Jorge R. Caspary, P.G. Base Coordinator
Technical Review Section *J.R.C.*

DATE: September 14, 1992

SUBJECT: Review of Contamination Assessment Reports for Sites
3221NW, 607NE, 3557S Naval Aviation Depot. Naval Air
Station Pensacola.

The above referenced documents have been reviewed and the following comments should be applied to all three sites.

Lab results

3221NW

Documentation (field observations and measurements, volumes, shipping manifest, sampling/analysis results, etc.) regarding the soil Initial Remedial Action (IRA) that was performed during tank replacement and/or removal should be provided. This documentation should include a map showing the approximate limits of the excavation(s) and the locations of the soil samples, along with a table with the OVA readings used to determine the extent of contaminated soil. Depending on the available documentation, supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" may be required.

If such information is not available, then supplemental soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1992 "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" should be performed at five feet intervals from the perimeter of the former tank areas until the previous soil borings are reached in order to establish the horizontal and vertical extent of soil contamination in the unsaturated zone. Discrete soil samples should be obtained at every two feet until the water table is reached. The OVA values should be summarized in a table, and the approximate extent of soil contamination [if any] should be represented in graphic form.

Eric S. Nuzie
September 14, 1992
Page Two

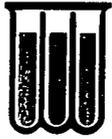
The consultant has obtained soil OVA readings every five feet below land surface. Compositing soil samples and obtaining OVA readings every five feet are not acceptable methodologies.

The results of the supplemental assessment should be provided to the Technical Review Section within sixty (60) days of receipt of this request. If additional time is needed, a time extension request should be submitted, in accordance with Rule 17-770.800(6), F.A.C. Should there be any questions concerning ~~this review, please contact me at (904) 488-0190.~~

All supplemental contamination assessment related documents presented to this Section for review and approval should be signed and sealed by a registered professional in accordance with Rule 17-770.500, F.A.C. The certification should be made by a registered professional who is able to demonstrate competence in the subject area(s) addressed within the sealed document.

APPENDIX B
SOIL SAMPLE ANALYTICAL DATA

SOIL SAMPLES SB-6 THROUGH SB-17



WADSWORTH/ALERT Laboratories

Division of Enseco Incorporated

5910 Breckerridge Parkway, Suite H
Tampa FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

3557S

NEDEP PENSACOLA

19 JANUARY 1993

Presented to:

ROGER DURHAM

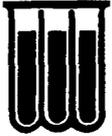
ABB ENVIRONMENTAL SERVICES, INC.

ENSECO-WADSWORTH/ALERT LABORATORIES

**Dan Henson
Project Manager**

**Randall C. Grubbs
Laboratory Director - Florida**

January 22, 1993

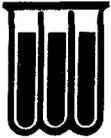


ENSECO-WADSWORTH/ALERT
Laboratories

INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Service, Inc. to Enseco-Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 19 January 1993, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



ENSECO-WADSWORTH/ALERT
Laboratories

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

MISCELLANEOUS

Tot. Recoverable Petroleum Hydrocarbons

** EPA Method 9073

NOTE: ** Indicates usage of this method to obtain results for this report.

(D) Indicates draft version of this method was used

EPA Methods Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Std. Methods Drinking Waters USEPA, 600/4-88/039, December, 1988.

USEPA Methods Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.

SW846 Methods From 40CFR Part 136, published in Federal Register on October 26, 1984.

ASTM Methods Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

NIOSH Method American Society for Testing and Materials.

NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2L3105-2
MATRIX : SOIL

DATE RECEIVED: 12/31/92

SAMPLE ID : 35575-SB6 (3')

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	1/ 5- 1/ 6/93	110	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3A1401-4
MATRIX : SOIL

DATE RECEIVED: 1/14/93

SAMPLE ID : 35575-SB7 (3')

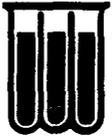
NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		94	
Tot Recoverable Pet Hydrocarbons	1/15/93	19	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1401-5
MATRIX : SOIL

DATE RECEIVED: 1/14/93

SAMPLE ID : 35575-SB8 (3')

NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		83	
Tot Recoverable Pet Hydrocarbons	1/15/93	140	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1401-6
MATRIX : SOIL

DATE RECEIVED: 1/14/93

SAMPLE ID : 35575-SB9 (3')

NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		93	
Tot Recoverable Pet Hydrocarbons	1/15/93	680	25 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1901-1
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB11 (3')

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		93	
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	200	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1901-2
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB12 (3')

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	90 210	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3A1401-7
MATRIX : SOIL

DATE RECEIVED: 1/14/93

SAMPLE ID : 35575-SB13 (3')

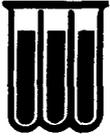
NADEP PENSACOLA

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		94	
Tot Recoverable Pet Hydrocarbons	1/15/93	26	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1901-3
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB14 (3')

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		89	
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	50	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3A1901-4
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB15 (3')

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
% Dry Weight		94		
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	1,600	50	mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3A1901-5
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB16 (3')

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		90	
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	320	25 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1901-6
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : SB17 (3')

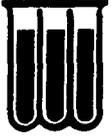
PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		93	
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	130	5 mg/kg

NOTE: ND (None Detected)



**ENSECO-WADSWORTH/ALERT
Laboratories**

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY ASSURANCE / QUALITY CONTROL PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

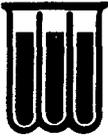
Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3A1901-BK
MATRIX : SOIL

DATE RECEIVED: 1/19/93

SAMPLE ID : LABORATORY BLANK

PROJ #3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	1/20- 1/21/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	01/20/93	01/21/93	78	30 50-140	LCS



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : 3A1902-9
MATRIX : SOIL

DATE RECEIVED : 01/19/93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
TRPH (IR)	01/20/93	01/21/93	95	110	15	30 50-140	3A1902-9

* = Diluted out

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Project 266263
345063
35578

Client: ABB Environmental Project Name/Number: NADEP Pensacola

Samples Received By: Zack R. [Signature] Date Received: 1/19/93
(Signature)

Sample Evaluation Form By: Zack R. [Signature] LAB No: 3A1961-1709
(Signature)

Type of shipping container samples received in? WAL Cooler

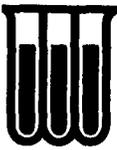
Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<u>7</u>	___
2. Were custody papers properly included with samples?	<u>7</u>	___
3. Were custody papers properly filled out (ink, signed, match labels)?	<u>7</u>	___
4. Did all bottles arrive in good condition (unbroken)?	<u>7</u>	___
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<u>7</u>	___
6. Were correct bottles used for the tests indicated?	<u>7</u>	___
7. Were proper sample preservation techniques indicated?	<u>7</u>	___
8. Were samples received within adequate holding time?	<u>7</u>	___
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<u>7</u>	___
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<u>7</u>	___
11. Were samples accepted into the laboratory? (If no see comments)	<u>7</u>	___

Cooler # 48-6201 Temp 5 °C Cooler # 48-44 Temp 4 °C
Cooler # 48-B182 Temp 4 °C Cooler # — Temp 4 °C

Comments: _____



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record _____ of _____
10095

Client		Project Name / Location			No Of CON- TAINERS	Parameter										Remarks
Sampler(s)		Project #				VOC -	PAH -	METALS -	TRPH -	EDB -						
Item #	Date	Time	MATRIX	Sample Location												
1	11/1/15	1:30	soil	S311 (S1)	1											
2	11/1/15	4:00	soil	S312 (S1)	1											
3	11/1/15	1:15	soil	S314 (S1)	1											
4	11/1/15	2:00	soil	S315 (S1)	1											
5	11/1/15	1:55	soil	S316 (S1)	1											
6	11/1/15	1:00	soil	S317 (S1)	1											
7	11/1/15	1:30	soil	down-drain (S1)	1											
8																
9																
10																
11																

Total Containers

7

Number of Coolers in Shipment

1

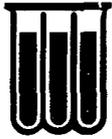
Bailers

1

Report To.	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Additional Comments Soil from around the soil samples at the site	1			11/1/15	1:30	
	2					
	3					
	4					
	5					
	6					

Original Accompanies Shipment

SOIL SAMPLES SB-18 THROUGH SB-23



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services Inc

5910 Breckenridge Parkway Suite H 813-621-0784
Tampa FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

SUBCONTRACT NUMBER: SE1-08-134

TASK ORDER NUMBER: 34

NADEP PENSACOLA

Presented to:

ROGER DURHAM

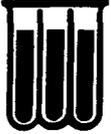
ABB ENVIRONMENTAL SERVICES, INC.

ENSECO-WADSWORTH/ALERT LABORATORIES

Joanne Anderson
Joanne Anderson
Project Manager

Randall C. Grubbs
Randall C. Grubbs
Laboratory Director - Florida

May 17, 1993

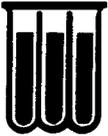


ENSECO-WADSWORTH/ALERT
Laboratories

INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Enseco-Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 28 April 1993, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

MISCELLANEOUS

Tot. Rec. Pet. Hydrocarbons
Extraction

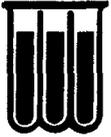
** EPA Method 418.1

** SW846 Method 9073

** SW846 Method 9071

NOTE: ** Indicates usage of this method to obtain results for this report.

(D) Indicates draft version of this method was used
EPA Methods Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Drinking Waters USEPA, 600/4-88/039, December, 1988.
Std. Methods Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.
USEPA Methods From 40CFR Part 136, published in Federal Register on October 26, 1984.
SW846 Methods Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.
ASTM Methods American Society for Testing and Materials.
NIOSH Method NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-1
MATRIX : SOIL

DATE RECEIVED: 4/28/93

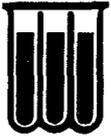
SAMPLE ID : SB 18 (3') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	82 ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3D2806-2
MATRIX : SOIL

DATE RECEIVED: 4/28/93

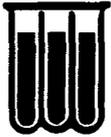
SAMPLE ID : SB 19 (2') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		90	
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	290	25 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-3
MATRIX : SOIL

DATE RECEIVED: 4/28/93

SAMPLE ID : SB 20 (2') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		86	
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	150	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3D2806-4
MATRIX : SOIL

DATE RECEIVED: 4/28/93

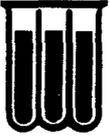
SAMPLE ID : SB 21 (2.5') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		76	
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-5
MATRIX : SOIL

DATE RECEIVED: 4/28/93

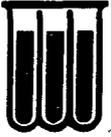
SAMPLE ID : SB 22 (2.5') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		81	
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	70	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-6
MATRIX : SOIL

DATE RECEIVED: 4/28/93

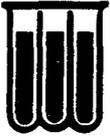
SAMPLE ID : SB 23 (2.5') NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	86 ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-7
MATRIX : SOIL

DATE RECEIVED: 4/28/93

SAMPLE ID : DUPLICATE NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		82	
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	91	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3D2806-8
MATRIX : WATER

DATE RECEIVED: 4/28/93

SAMPLE ID : EQUIPMENT BLANK NADEP PENSACOLA/3557S

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	ND	1 mg/L

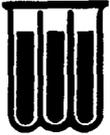
NOTE: ND (None Detected)



**ENSECO-WADSWORTH/ALERT
Laboratories**

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY ASSURANCE / QUALITY CONTROL PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3D2806-BK
MATRIX : WATER

DATE RECEIVED: 4/28/93

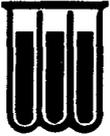
SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	ND	1 mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3D2806-BK
MATRIX : SOIL

DATE RECEIVED: 4/28/93

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	5/ 5- 5/ 6/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3D2806-BK
MATRIX : SOIL

DATE RECEIVED: 4/28/93

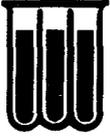
SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	5/11- 5/12/93	ND	5 mg/kg

NOTE: ND (None Detected)



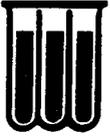
ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	05/05/93	05/06/93	91	24 75-124	LCS



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	05/05/93	05/06/93	88	30 50-140	LCS
TRPH (IR)	05/10/93	05/11/93	90	30 50-140	



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : 3D2806-2
MATRIX : WATER

DATE RECEIVED : 04/28/93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
TRPH (IR)	05/05/93	05/06/93	210	88	82	30 50-140	3D2806-2

* = Diluted out

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB Project Name/Number: Bldg 228/3557-S
 Samples Received By: N. Roberts Date Received: 4-28-93
 (Signature)
 Sample Evaluation Form By: Nancy Robertson LAB No: 6861/302806
 (Signature)

Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were custody papers properly included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were custody papers properly filled out (ink, signed, match labels)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Were correct bottles used for the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were proper sample preservation techniques indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Were samples received within adequate holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Were samples accepted into the laboratory? (If no see comments)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler # 48 R140 Temp 6 °C Cooler # _____ Temp _____ °C
 Cooler # 48 B508 Temp 4 °C Cooler # _____ Temp _____ °C

Comments: _____



WILSON/ALERT
LABORATORIES
 Sampling, testing, mobile labs

5910 Breckenridge Pkwy
 Suite H
 Tampa, FL 33610

(813) 621-0784
 Fax (813) 623-6021

Record _____ of _____
 # **10984**

Client <i>WIS</i>				Project Name / Location		No Of CON- TAINERS	Parameter										Remarks		
Sampler(s)			Project #				VOC -	PAH -	METALS -	TRPH -	EDB -								
Item #	Date	Time	MATRIX	Sample Location															
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			

Total Containers **5**

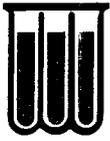
Number of Coolers in Shipment **2**

Bailers **1**

Report To	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Additional Comments	1		<i>WIS</i>	<i>McBain</i>	<i>1/25/93</i>	<i>1245</i>
	2					
	3					
	4					
	5					
	6					

Original Accompanies Shipment

SOIL SAMPLES SB-24 THROUGH SB-29



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services Inc

5910 Breckenridge Parkway, Suite H 813-621-0784
Tampa FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

SUBCONTRACT NUMBER: SE1-08-134

TASK ORDER NUMBER: 34

35575, NADEP PENSACOLA

Presented to:

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES, INC.

ENSECO-WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

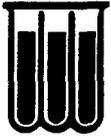
TAMPA, FLORIDA 33610

(813) 621-0784


Joanne Anderson
Project Manager


Randall C. Grubbs
Laboratory Director - Florida

June 9, 1993

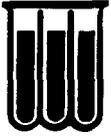


ENSECO-WADSWORTH/ALERT
Laboratories

INVOLVEMENT

This report summarizes the analytical results of the 33575, NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Enseco-Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 28 May 1993, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-1
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB24

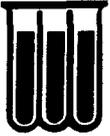
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		88	
Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 4/93	56	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-2
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB25

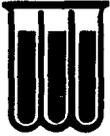
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		80	
Tot Recoverable Pet Hydrocarbons	6/ 3/93	10	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3E2804-3
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB26

PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		88	
Tot Recoverable Pet Hydrocarbons	6/ 3 - 6/ 4/93	46	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3E2804-4
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB27

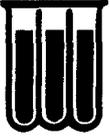
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 4/93	86 ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-5
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB28

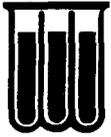
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		76	
Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 7/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-6
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-SB29

PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		93	
Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 7/93	170	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-7
MATRIX : SOIL

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-DUP1

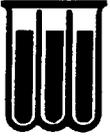
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		87	
Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 7/93	35	5 mg/kg

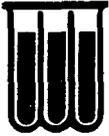
NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY ASSURANCE / QUALITY CONTROL PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

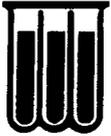
Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	66-119
Benzene	10	86	93	8	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-BK
MATRIX : SOIL

DATE RECEIVED: 5/28/93

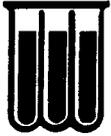
SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	6/ 3 - 6/ 4/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3E2804-8
MATRIX : WATER

DATE RECEIVED: 5/28/93

SAMPLE ID : PEN-35575-EB1

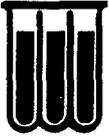
PROJ# 7527-40

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	6/ 8- 6/ 9/93	ND	1	mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3E2804-BK
MATRIX : WATER

DATE RECEIVED: 5/28/93

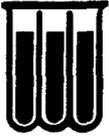
SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	6/ 8- 6/ 9/93	ND	1 mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3E2804-BK
MATRIX : SOIL

DATE RECEIVED: 5/28/93

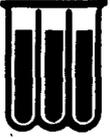
SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	6/ 3- 6/ 7/93	ND	5 mg/kg

NOTE: ND (None Detected)



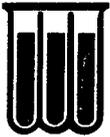
ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	06/08/93	06/09/93	95	24 75-123	LCS



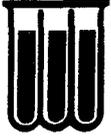
ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE	DATE	LCS	QC LIMITS		
	PREPARED	ANALYZED	%REC	RPD	%REC	
TRPH (IR)	06/03/93	06/04/93	90	35	56-125	LCS
TRPH (IR)	06/03/93	06/07/93	96	35	56-125	



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : 3E2804-3
MATRIX : SOIL

DATE RECEIVED : 05/28/93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
TRPH (IR)	06/03/93	06/04/93	112	94	17	30 50-140	3E2804-3

* = Diluted out

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB Project Name/Number: 35575 WADEP PENBACC

Samples Received By: [Signature] /WAD Date Received: 5-28-93
(Signature)

Sample Evaluation Form By: [Signature] /WAD LAB No: 7053/3E2804
(Signature)

Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 1. Were custody seals on shipping container(s) intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Were custody papers properly included with samples? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Did all bottles arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Were correct bottles used for the tests indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Were proper sample preservation techniques indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. Were samples received within adequate holding time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler # — Temp 4 °C Cooler # — Temp — °C
 Cooler # — Temp — °C Cooler # — Temp — °C

Comments: #8 ON COC LABELED PEN-35575-ER2 - THE ACTUAL SAMPLE WAS LABELED PEN-35575-EB1 ; SAMPLE SB24, ONLY RECEIVED 1 CONTAINER (VICE 2 ON COC); SAMPLE SB25, RECEIVED 2 CONTAINERS (VICE 1 ON COC)



Client		Project Name / Location			No Of CON- TAINERS	Parameter										Remarks
Sampler(s)		Project #				VOC--	PAH--	METALS--	TRPH--	EDB--						
Item #	Date	Time	MATRIX	Sample Location												
1	7-2-03	7:00	Soil	PEP-35575-5B24	2			2								
2		8:30		PEP-35575-5B25	1			1								
3		7:45		PEP-35575-5B26	1			1								
4		8:30		PEP-35575-5B27	1			1								
5		8:45		PEP-35575-5B28	2			2								
6		7:00		PEP-35575-5B29	1			1								
7				PEP-35575-D021	1			1								
8		7:30	4 U	PEP-35575-EB2	1			1								
9																
10																
11																

Total Containers

10

Number of Coolers in Shipment

4

Bailers

0

Report To	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Roger Durham	1	1-8	PLWA / A25-ES	F&D-EX	5/27/93	17:30
Additional Comments: There are a variety of different size bottles, but the total sample size is approximately 2000 ml.	2					
	3					
	4					
	5					
	6					

Original Accompanies Shipment

SOIL SAMPLES SB-30 THROUGH SB-33



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services, Inc

5910 Breckenridge Parkway, Suite H Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NUMBER 7527-30

NADEP PENSACOLA

08 JULY 1993

Presented to:

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES, INC.

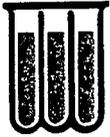
ENSECO-WADSWORTH/ALERT LABORATORIES

Joanne Anderson

Joanne Anderson
Project Manager

**Randall C. Grubbs
Laboratory Director - Florida**

July 16, 1993



ENSECO-WADSWORTH/ALERT
Laboratories

INVOLVEMENT

This report summarizes the analytical results of the NADEP Pensacola site submitted by ABB Environmental Services, Inc. to Enseco-Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 08 July 1993, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.



ENSECO-WADSWORTH/ALERT
Laboratories

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

MISCELLANEOUS

Tot. Rec. Petroleum Hydrocarbons ** EPA Method 418.1 ** SW846 Method 9073 (D)
Extraction ** SW846 Method 9071

NOTE: ** Indicates usage of this method to obtain results for this report.

(D) Indicates draft version of this method was used

EPA Methods Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Std. Methods Drinking Waters USEPA, 600/4-88/039, December, 1988. Standard Methods for the Examination of Water and Waste-water, APHA, 16th edition, 1985.

USEPA Methods From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods American Society for Testing and Materials.

NIOSH Method NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-1
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-SB30 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		88	
Tot Recoverable Pet Hydrocarbons	7/14/93	360	25 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3G0807-2
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-SB31 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		81	
Tot Recoverable Pet Hydrocarbons	7/14/93	320	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-3
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-SB32 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		79	
Tot Recoverable Pet Hydrocarbons	7/14/93	50	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-4
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-SB33 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		84	
Tot Recoverable Pet Hydrocarbons	7/14/93	200	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-5
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-DUP 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
% Dry Weight		76	
Tot Recoverable Pet Hydrocarbons	7/14/93	30	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-6
MATRIX : WATER

DATE RECEIVED: 7/ 8/93

SAMPLE ID : PEN-3557S-EB 7527-30

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	7/13/93	ND	1	mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT
Laboratories

**QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY**

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD		QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

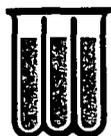
Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 3G0807-BK
MATRIX : WATER

DATE RECEIVED: 7/ 8/93

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Tot Recoverable Pet Hydrocarbons	7/13/93	ND	1	mg/L

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 3G0807-BK
MATRIX : SOIL

DATE RECEIVED: 7/ 8/93

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ANALYTICAL REPORT

PARAMETER	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Tot Recoverable Pet Hydrocarbons	7/14/93	ND	5 mg/kg

NOTE: ND (None Detected)



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : WATER

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	07/13/93	07/13/93	100	24 75-123	LCS



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : LCS

MATRIX : SOIL

LABORATORY CONTROL SAMPLE RESULTS
WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	LCS %REC	QC LIMITS RPD %REC	
TRPH (IR)	07/14/93	07/14/93	92	35 56-125	LCS



ENSECO-WADSWORTH/ALERT
Laboratories

LAB ID : 3G0807-1
MATRIX : SOIL

DATE RECEIVED : 07/08/93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - WET CHEMISTRY

PARAMETER	DATE PREPARED	DATE ANALYZED	MS %REC	MSD %REC	RPD	QC LIMITS RPD %REC	LAB ID
TRPH (IR)	07/14/93	07/14/93	94	90	4	30 50-140	3G0807-1

* = Diluted out

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB Project Name/Number: DFM - Pipeline

Samples Received By: Eric O. Eckel Date Received: 7/8/93
(Signature) 836120028

Sample Evaluation Form By: Eric O. Eckel LAB No: 7311/360807
(Signature)

Type of shipping container samples received in? WAL Cooler
Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 1. Were custody seals on shipping container(s) intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Were custody papers properly included with samples? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Did all bottles arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Were correct bottles used for the tests indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Were proper sample preservation techniques indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. Were samples received within adequate holding time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler # B501 Temp 10 °C Cooler # B400 Temp 20 °C
Cooler # B515 Temp 30 °C Cooler # B92 Temp 5 °C

Comments: Air Bubble noted:
MW3 - 601/602 - 1 vial MW6 - 601/602 (2 vials)
EDB - 2 vials MW10 - 601/602 (only 2 vials, 1 w/ bubble)
Dup - 601/602 2 vials MW10 - EPBC 1 vial
EDB 2 "



WADSWORTH/ALERT
LABORATORIES
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record 1 of 1
08908

Client		Project Name / Location			No. Of CONTAINERS	Parameter										Remarks
SAMPLER(S)		PROJECT #				VOC-	PAH-	METALS-	TRPH-	EDB-						
Item #	Date	Time	MATRIX	Sample Location												
ABB-ES		NADEP <i>Pennacola</i>														
P. WAGNER, B. Swadlow		7527-30														
11	7-6-93	17:31	Soil	PEN-35575-SB30	1			1							Depth 2.7'	
12		17:40		PEN-35575-SB31	1			1							" 3.5'	
13		18:05		PEN-35575-SB32	1			1							" 1', Time on label is incorrect	
14		18:15		PEN-35575-SB33	1			1							" 1.5', " " "	
15				PEN-35575-DUP	1			1								
16		17:58	H ₂ O	PEN-35575-EB	1			1								
17																
8																
9																
10																
11																

Total Containers **06**

Number of Coolers in Shipment **04**

Bailers **01**

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
ROGER DURHAM	1	1-6	Earl Q. Ecker	Fed Ex	6/30/93	19:00
<u>Blot</u> <u>Preservation lot</u>	2	1-6	Paul / by ABB-ES	Fed Ex	7-7-93	4:00 pm
642893	3			Earl Q Ecker EWAR	7/8/93	10:30
F527B	4					
04062893	5					
	6					

Original Accompanies Shipment

SOIL SAMPLES SB-34 THROUGH SB-48



ENSECO-WADSWORTH/ALERT Laboratories
Division of Corning Lab Services, Inc.

5910 Breckenridge Parkway, Suite H 813-621-0784
Tampa, FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NO. 3557S

NADEP PENSACOLA

ROGER DURHAM

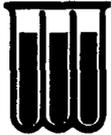
ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES
Certification Numbers: E84059, HRS84297
FDEP CompQAP: 870270G

Chris Amstutz

Chris Amstutz
Project Manager

March 24, 1994



ENSECO-WADSWORTH/ALERT

Laboratories

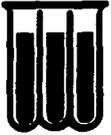
ANALYTICAL METHODS SUMMARY

Enseco-Wadsworth/ALERT Laboratories utilizes only USEPA approved methods in analytical work. The methods used for the analyses presented in the following report are listed below.

<u>Parameters</u>	<u>Methods</u>
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1
Petroleum Hydrocarbons, Total Recoverable	SW846 9073
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

- MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
Cincinnati, OH: March 1983 and its updates.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, September, 1986.



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 34 (1-3')

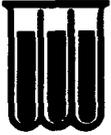
WO #: K8303
LAB #: B4C090054-001
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	26.1	5.3	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	94.7	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 35 (1-3')

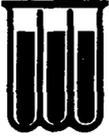
WO #: K8304
LAB #: B4C090054-002
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>REPORTING</u>			<u>METHOD</u>	<u>PREPARATION - QC</u>	
	<u>RESULT</u>	<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	31.4	5.9	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	85.1	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 36 (1-3')

WO #: K8305
LAB #: B4C090054-003
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	5.6	5.5	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	90.3	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 37 (1-3')

WO #: K8307
LAB #: B4C090054-004
MATRIX: SOLID

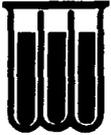
DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- **INORGANIC ANALYTICAL REPORT** -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	6.1	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	81.8	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 38 (1-3')

WO #: K8308
LAB #: B4C090054-005
MATRIX: SOLID

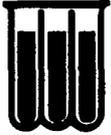
DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	6.4	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	77.7	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 39 (1-3')

WO #: K8309
LAB #: B4C090054-006
MATRIX: SOLID

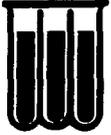
DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- **INORGANIC ANALYTICAL REPORT** -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	6.6	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	76.2	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 40 (0-2')

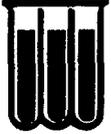
WO #: K8310
LAB #: B4C090054-007
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	22.1	6.6	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	75.3	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 41 (0-2')

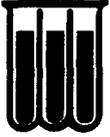
WO #: K8311
LAB #: B4C090054-008
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	299	5.8	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	86.9	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 42 (0-2')

WO #: K8313
LAB #: B4C090054-009
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	1,720	32.8	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	76.1	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 43 (0-2')

WO #: K8316
LAB #: B4C090054-010
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u>		<u>QC</u>
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>	
Petroleum Hydrocarbons, Total Recoverable	1,390	29.1	mg/kg	SW846 9073	3/21-	3/22/94	4080034
Solids, Total (TS)	85.8	1.0	%	MCAWW 160.3 M	3/17-	3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 44 (0-2')

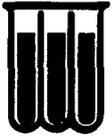
WO #: K8317
LAB #: B4C090054-011
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	6.7	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	75.1	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 45 (0-2')

WO #: K8318
LAB #: B4C090054-012
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	442	10.7	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	93.5	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 46 (1-3')

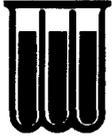
WO #: K8319
LAB #: B4C090054-013
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	25.0	6.3	mg/kg	SW846 9073	3/21- 3/22/94	4080034
Solids, Total (TS)	79.0	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

SB 47 (1-3')

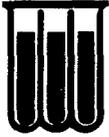
WO #: K8321
LAB #: B4C090054-014
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	116	5.3	mg/kg	SW846 9073	3/22- 3/23/94	4081040
Solids, Total (TS)	93.8	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

SB 48 (1-3')

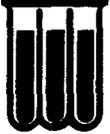
WO #: K8322
LAB #: B4C090054-015
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	99.8	6.3	mg/kg	SW846 9073	3/22- 3/23/94	4081040
Solids, Total (TS)	78.8	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

DUPLICATE 1

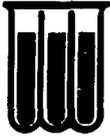
WO #: K8323
LAB #: B4C090054-016
MATRIX: SOLID

DATE SAMPLED: 3/07/94
DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	9.6	5.3	mg/kg	SW846 9073	3/22- 3/23/94	4081040
Solids, Total (TS)	94.0	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074090

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

DUPLICATE 2

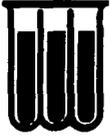
WO #: K8324
 LAB #: B4C090054-017
 MATRIX: SOLID

DATE SAMPLED: 3/07/94
 DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	910	33.8	mg/kg	SW846 9073	3/22- 3/23/94	4081040
Solids, Total (TS)	74.0	1.0	%	MCAWW 160.3 M	3/17- 3/18/94	4074092

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

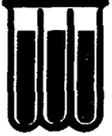
WO #: K8327
 LAB #: B4C090054-018
 MATRIX: WATER

DATE SAMPLED: 3/07/94
 DATE RECEIVED: 3/09/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION - QC</u>	
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	3/15/94	4074062

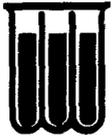
NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT

Laboratories

**QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY**

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



ENSECO-WADSWORTH/ALERT

Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

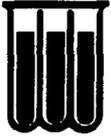
Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

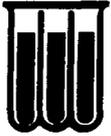
LAB #: B4C210000-034

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons,	ND	5.0	mg/kg	3/21- 3/22/94	4080034
Petroleum Hydrocarbons,	ND	5.0	mg/kg	3/22- 3/23/94	4081040
Petroleum Hydrocarbons	ND	1.0	mg/L	3/15/94	4074062

NOTE:

ND (NONE DETECTED)



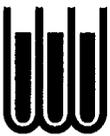
ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4C090054

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	90	(55-131)	3/21- 3/22/94	4080034
Petroleum Hydrocarbons, Total Recoverable	92	(55-131)	3/22- 3/23/94	4081040
Petroleum Hydrocarbons Total Recoverable	95	(69-125)	3/15/94	4074062



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record 2 of C

0772

Client		Project Name / Location			No. Of CONTAINERS	Parameter										Remarks
Sampler(s)		Project #				VOC-	PAH-	METALS-	TRPH-	EDB-						
Item #	Date	Time	MATRIX	Sample Location												
1	1/15/04	1444	SIL	SB 43 (1-2)	1				1							
2	1/15/04	1507	SIL	SB 44 (1-2)	1				1							
3	1/15/04	1518	SIL	SB 45 (1-2)	1				1							
4	1/15/04	1553	SIL	SB 46 (1-3)	1				1							
5	1/15/04	1626	SIL	SB 47 (1-3)	1				1							
6	1/15/04	1634	SIL	SB 48 (1-3)	1				1							
7	1/15/04		SIL	20000000 2	1				1							
8																
9																
10																
11																

Total Containers

7

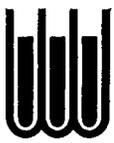
Number of Coolers in Shipment

0

Bailers

0

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
<i>R. ...</i>	1					
	2					
	3					
	4					
	5					
	6					



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record 1 of 2
1538

Client		Project Name / Location			No Of CON- TAINERS	Parameter										Remarks
Sampler(s)		Project #				VOC-	PAH-	METALS-	TRPH-	EDB-						
Item #	Date	Time	MATRIX	Sample Location												
1	11/10	11:05	SLC	SB 37 (1-3)	1				1							
2	11/10	11:05	SLC	SB 38 (1-3)	1				1							
3	11/10	11:20	SLC	SB 36 (1-3)	1				1							
4	11/10	11:35	SLC	SB 37 (1-3)	1				1							
5	11/10	11:42	SLC	SB 38 (1-3)	1				1							
6	11/10	12:00	SLC	SB 39 (1-3)	1				1							
7	11/10	12:25	SLC	SB 40 (1-2)	1				1							
8	11/10		SLC	1000000001	1				1							
9	11/10		SLC	1 - 1000000000	1				1							
10	11/10	12:24	SLC	SB 41 (1-2)	1				1							
11	11/10	12:31	SLC	SB 42 (1-2)	1				1							

Total Containers

11

Number of Coolers in Shipment

1

Bailers

0

Report To	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Report To: <u>SCOTT DUKEL</u> Additional Comments:	1					
	2					
	3					
	4					
	5					
	6					

**SOIL TPH ANALYSES
SAMPLES SB-49 AND SB-30A**



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services, Inc.

5910 Breckenridge Parkway, Suite H 813-621-0784
Tampa, FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NO. 3557S

NADEP PENSACOLA

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES
Certification Numbers: E84059, HRS84297
FDEP CompQAP: 870270G

Chris Amstutz /cam

Chris Amstutz
Project Manager

April 29, 1994



ENSECO-WADSWORTH/ALERT

Laboratories

EXECUTIVE SUMMARY - Detection Highlights

B4D150030

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>
SB 49 (2-2.5')				
TPH (Extractables)	28	13	mg/kg	SW846 8015 M
Petroleum Hydrocarbons, Total Recoverable	754	32.9	mg/kg	SW846 9073
Solids, Total (TS)	76.0	1.0	%	MCAWW 160.3



ENSECO-WADSWORTH/ALERT
Laboratories

ANALYTICAL METHODS SUMMARY

Enseco-Wadsworth/ALERT Laboratories utilizes only USEPA approved methods in analytical work. The methods used for the analyses presented in the following report are listed below.

<u>Parameters</u>	<u>Methods</u>
Tot. Petroleum Hydrocarbon	SW846 8015 MODIFIED
Petroleum Hydrocarbons, Total Recoverable	SW846 9073
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

- MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
Cincinnati, OH: March 1983 and its updates.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, September, 1986.



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 49(2-2.5')

WO #: M1618
LAB #: B4D150030-001
MATRIX: SOLID

DATE SAMPLED: 4/14/94
DATE RECEIVED: 4/15/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	754	32.9	mg/kg	SW846 9073	4/25- 4/26/94	4115067
Solids, Total (TS)	76.0	1.0	%	MCAWW 160.3 M	4/18/94	4109041

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB 49(2-2.5')

WO #: M1618106
LAB #: B4D150030-001
MATRIX: SOLID

DATE SAMPLED: 4/14/94
DATE RECEIVED: 4/15/94

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
TPH (Extractables)	28	13	SW846 8015 M	04/19-04/25/94	4109040

NOTE: DRY WEIGHT
PATTERN RESEMBLES MOTOR OIL



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT

Laboratories
**QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY**

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



ENSECO-WADSWORTH/ALERT

Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4D250000-067

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons,	ND	5.0	mg/kg	4/25- 4/26/94	4115067

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

LAB #: A4D190000-040

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> <u>(mq/kg)</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
TPH (Extractables)	ND	10	4/19- 4/22/94	4109040

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4D150030

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	106	(55-131)	4/25- 4/26/94	4115067



ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4109040
LAB #: A4D190000-040 C

PREPARATION DATE: 4/19/94
DATE ANALYZED: 4/22/94

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
TPH (Extractables)	79	(38-120)



ENSECO-WADSWORTH/ALERT
Laboratories

MATRIX SPIKE REPORT

Lot #: B4D150030

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	RECOVERY		Q/C <u>LIMITS</u>	RPD	RPD <u>LIMITS</u>	PREPARATION - <u>ANALYSIS DATE</u>	Q/C <u>BATCH</u>
	PERCENT <u>MS</u>	<u>MSD</u>					
Lab# B4D150030- 1 Matrix: SOLID							
Petroleum Hydrocarbons,	88	93	(50-140)	6.2	30	4/25- 4/26/94	4115067
Total Recoverable							



ENSECO-WADSWORTH/ALERT
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4109040
LAB #: B4D150030-001 S
MATRIX: SOLID

WO #: M1618
PREPARATION DATE: 4/19/94
DATE ANALYZED: 4/23/94

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
TPH (Extractables)	63	94	(10-114)	39	(0-49)

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB-ES Project Name/Number: NADEP Pensacola

Samples Received By: Carol Mc Multy Date Received: 4/15/94
(Signature)

Sample Evaluation Form By: Earl A. Echa LAB No: B4D150030
(Signature)

Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------------------------------|-------|
| 1. Were custody seals on shipping container(s) intact? | <u>no seals</u> | _____ |
| 2. Were custody papers properly included with samples? | <input checked="" type="checkbox"/> | _____ |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <input checked="" type="checkbox"/> | _____ |
| 4. Did all bottles arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> | _____ |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <input checked="" type="checkbox"/> | _____ |
| 6. Were correct bottles used for the tests indicated? | <input checked="" type="checkbox"/> | _____ |
| 7. Were proper sample preservation techniques indicated? | <input checked="" type="checkbox"/> | _____ |
| 8. Were samples received within adequate holding time? | <input checked="" type="checkbox"/> | _____ |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <u>no VOA's</u> | _____ |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <input checked="" type="checkbox"/> | _____ |
| 11. Were samples accepted into the laboratory? (If no see comments) | <input checked="" type="checkbox"/> | _____ |

Cooler # — Temp 8 °C Cooler # — Temp — °C
 Cooler # — Temp — °C Cooler # — Temp — °C

Comments: no custody seals TH extractable per client



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenrdge Pkwy
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Chain of Custody Record

Record _____ of _____
10569

Client: <i>ABB-ES</i>		Project Name / Location: <i>10111 P...</i>			No. Of CON-TAINERS	Parameter										Remarks	
Sampler(s): <i>R 201-</i>		Project #: <i>33513</i>				VOC-	PAH-	METALS-	TRPH-	EDB-							
Item #	Date	Time	MATRIX	Sample Location													
1	<i>4/11/01</i>	<i>10:00</i>	<i>S</i>	<i>SB 49 (2.7')</i>	<i>2</i>				<i>1</i>								<i>Extractable TPH</i>
2			<i>Subs</i>	<i>SB 49 (2.7')</i>	<i>1</i>												
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	

Total Containers: **2** Number of Coolers in Shipment: **1** Bailers: **0**

Report To: <i>Roger DeLeon</i>	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Additional Comments: <i>1 of 2 samples per in 2001/01/11 10:00 AM per</i>	1	<i>1</i>	<i>R. DeLeon</i>		<i>4/11/01</i>	<i>10:00</i>
	2					
	3					
	4					
	5					
	6					

Original Accompanies Shipment



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services, Inc

5910 Breckenridge Parkway, Suite H 813-621-0784
Tampa, FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

NADEP

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES
Certification Numbers: E84059, HRS84297
FDEP CompQAP: 870270G

Chris Amstutz
Project Manager

June 29, 1994



ENSECO-WADSWORTH/ALERT

Laboratory

ANALYTICAL METHODS SUMMARY

Parameters

Tot. Petroleum Hydrocarbon
Solids, Total (TS)

Methods

SW846 8015 MODIFIED
MCAWW 160.3 MODIFIED

References:

MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
Cincinnati, OH: March 1983 and its updates.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, September, 1986.

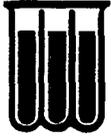


**ENSECO-WADSWORTH/ALERT
Laboratories**

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
O5590	B4F230023-001	MW8-1
O5592	B4F230023-002	SB30A-1.5



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

SB30A-1.5

WO #: 05592102
 LAB #: B4F230023-002
 MATRIX: SOLID

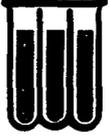
DATE SAMPLED: 6/09/94
 DATE RECEIVED: 6/11/94

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
TPH (Extractables)	ND	3.8	SW846 8015 M	06/23-06/27/94	4175006

NOTE: DRY WEIGHT

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

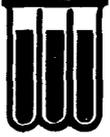
LAB #: B4F240000-006

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> <u>(mg/kg)</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
TPH (Extractables)	ND	3.0	6/23- 6/27/94	4175006

NOTE:

ND (NONE DETECTED)



**ENSECO-WADSWORTH/ALERT
Laboratories**

CHECK SAMPLE REPORT

QC BATCH: 4175006
LAB #: B4F240000-006 C

PREPARATION DATE: 6/23/94
DATE ANALYZED: 6/27/94

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
TPH (Extractables)	112	(50-150)

APPENDIX C

CLOSURE ASSESSMENT FORM



Florida Department of Environmental Regulation

Twin Towers Office Bldg • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Form Title Closure Assessment Form
 Effective Date December 10 1990
 DER Application No _____
 (Filed in by DER)

Closure Assessment Form

Owners of storage tank systems that are replacing, removing or closing in place storage tanks shall use this form to demonstrate that a storage system closure assesment was performed in accordance with Rule 17-761 or 17-762, Florida Administrative Code. Eligible Early Detection Incentive (EDI) and Reimbursement Program sites do not have to perform a closure assessment.

Please Print or Type
Complete All Applicable Blanks

- Date: 5 May 1994
- DER Facility ID Number: 17/9202973
- County: Escambia
- Facility Name: US Navy - Naval Aviation Depot
- Facility Owner: Commanding Officer, Naval Air Station
- Facility Address: Building 3557, Naval Air Station
- Mailing Address: 190 Radford Boulevard, Pensacola, Florida 32508-5217
- Telephone Number: (904) 452-3094
- Facility Operator: Mr. Paul Semmes
- Are the Storage Tank(s): (Circle one or both) A. Aboveground or B. Underground
Type of Product(s) Stored: Waste Oil
- Were the Tank(s). (Circle one) A. Replaced B. Removed C. Closed in Place D. Upgraded (aboveground tanks only)
- Number of Tanks Closed: 1
- Age of Tanks: 4

Facility Assessment Information

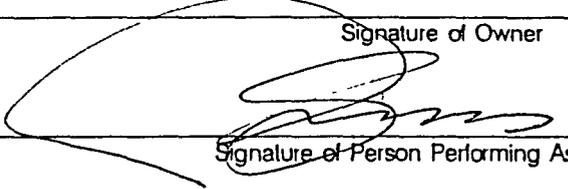
Yes No Not Applicable

- | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | 1. Is the facility participating in the Florida Petroleum Liability Insurance and Restoration Program (FPLIRP)? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | | 2. Was a Discharge Reporting Form submitted to the Department?
If yes, When: _____ Where: _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. Is the depth to ground water less than 20 feet? |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4. Are monitoring wells present around the storage system?
If yes, specify type: <input checked="" type="checkbox"/> Water monitoring <input type="checkbox"/> Vapor monitoring |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 5. Is there free product present in the monitoring wells or within the excavation? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 6. Were the petroleum hydrocarbon vapor levels in the soils greater than 500 parts per million for gasoline?
Specify sample type: <input type="checkbox"/> Vapor Monitoring wells <input type="checkbox"/> Soil sample(s) |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 7. Were the petroleum hydrocarbon vapor levels in the soils greater than 50 parts per million for diesel/kerosene?
Specify sample type: <input type="checkbox"/> Vapor Monitoring wells <input type="checkbox"/> Soil sample(s) |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8. Were the analytical laboratory results of the ground water sample(s) greater than the allowable state target levels?
(See target levels on reverse side of this form and supply laboratory data sheets) |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 9. If a used oil storage system, did a visual inspection detect any discolored soil indicating a release? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 10. Are any potable wells located within 1/4 of a mile radius of the facility? |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 11. Is there a surface water body within 1/4 mile radius of the site? If yes, indicate distance: _____ |

DER Form #	17-761.900(8)
Form Title	Closure Assessment Form
Effective Date	December 10, 1990
DER Application No.	(Filed in by DER)

2. A detailed drawing or sketch of the facility that includes the storage system location, monitoring wells, buildings, storm drains, sample locations, and dispenser locations must accompany this form.
3. If a facility has a pollutant storage tank system that has both gasoline and kerosene/diesel stored on site, both EPA Method 602 and EPA Method 610 must be performed on the ground water samples obtained.
4. Amount of soils removed and receipt of proper disposal.
5. If yes is answered to any one of questions 5-9, a Discharge Reporting Form 17-761.900(1) indicating a suspected release shall be submitted to the Department within one working day.
6. A copy of this form and any attachments must be submitted to the Department's district office in your area and to the locally administered program office under contract with the Department within 60 days of completion of tank removal or filling a tank with an inert material.

 Signature of Owner


 Signature of Person Performing Assessment

Paul R. Semmes, P.E.
 Environmental Engineer
 Title of Person Performing Assessment

 Date

10 May 94
 Date

State Ground Water Target Levels That Affect A Pollutant Storage Tank System Closure Assessment

State ground water target levels are as follows:

1. For gasoline (EPA Method 602):

- a. Benzene 1 ug/l
- b. Total VOA 50 ug/l
 - Benzene
 - Toluene
 - Total Xylenes
 - Ethylbenzene
- c. Methyl Test-Butyl Ether (MTBE) 50 ug/l

2. For kerosene/diesel (EPA Method 610):

- a. Polynuclear Aromatic Hydrocarbons (PAHS)
 (Best achievable detection limit, 10 ug/l maximum)

APPENDIX D
GROUNDWATER SAMPLE ANALYTICAL DATA

TEMPORARY WELL TW-1
MAY 3, 1994



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services, Inc

5910 Breckenridge Parkway, Suite H
Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NO. 7528-45⁷ *med*

NADEP 607NE & 3557S

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES

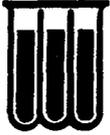
Certification Numbers: E84059, HRS84297

FDEP CompQAP: 870270G

Chris Amstutz

Chris Amstutz
Project Manager

May 19, 1994



ENSECO-WADSWORTH/ALERT

Laboratory

ANALYTICAL METHODS SUMMARY

Enseco-Wadsworth/ALERT Laboratories utilizes only USEPA approved methods in analytical work. The methods used for the analyses presented in the following report are listed below.

<u>Parameters</u>	<u>Methods</u>
Volatile Organics	USEPA 624
Semivolatile Organics	USEPA 625
Chromium	MCAWW 200.7
Arsenic	MCAWW 206.2
Lead	MCAWW 239.2
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1
Cadmium	SW846 6010

References:

- MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL: Cincinnati, OH: March 1983 and its updates.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, September, 1986.
- USEPA Longbottom, J. and Lichtenberg, J., Methods for Organic Chemical Analysis of Municipal and Industrial Waste Water EMSL: Cincinnati, OH, July 1982 and its updates.



ENSECO-WADSWORTH/ALERT
Laboratories

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
M7137	B4E040035-001	607NE-MW1
M7139	B4E040035-002	607NE-MW2
M7142	B4E040035-003	607NE-MW3
M7144	B4E040035-004	607NE-MW4
M7145	B4E040035-005	607NE-MW5
M7151	B4E040035-006	607NE-TW1
M7152	B4E040035-007	3557S-TW1
M7153	B4E040035-008	DUPLICATE
M7154	B4E040035-009	EQUIPMENT BLANK
M7155	B4E040035-010	TRIP BLANK



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152106
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Volatiles -----					
PARAMETER	1 OF 2		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	RESULT (ug/L)	REPORTING LIMIT			
Acrolein	ND	1.0	USEPA 624	05/07/94	4131052
Acrylonitrile	ND	1.0	USEPA 624	05/07/94	4131052
Benzene	ND	1.0	USEPA 624	05/07/94	4131052
Bromodichloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Bromoform	ND	1.0	USEPA 624	05/07/94	4131052
Bromomethane	ND	1.0	USEPA 624	05/07/94	4131052
Carbon tetrachloride	ND	1.0	USEPA 624	05/07/94	4131052
Chlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
Dibromochloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Chloroethane	ND	1.0	USEPA 624	05/07/94	4131052
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	05/07/94	4131052
Chloroform	ND	1.0	USEPA 624	05/07/94	4131052
Chloromethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,3-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,4-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloropropane	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052
<u>SURROGATE RECOVERY</u>					
	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
1,2-Dichloroethane	108	(78 - 130)			
Toluene-d8	99	(90 - 109)			
Bromofluorobenzene	94	(81 - 117)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152106
 LAB #: B4E040035-007
 MATRIX: WATER

DATE SAMPLED: 5/03/94
 DATE RECEIVED: 5/04/94

----- GC/MS Volatiles -----

2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylbenzene	ND	1.0	USEPA 624	05/07/94	4131052
Trichlorofluoromethane	ND	1.0	USEPA 624	05/07/94	4131052
Methylene chloride	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Tetrachloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Toluene	ND	1.0	USEPA 624	05/07/94	4131052
1,1,1-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Trichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Vinyl chloride	ND	1.0	USEPA 624	05/07/94	4131052
Xylenes, Total	ND	1.0	USEPA 624	05/07/94	4131052

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane	108	(78 - 130)
Toluene-d8	99	(90 - 109)
Bromofluorobenzene	94	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152107
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

GC/MS Semi-Volatiles

1 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> LIMIT	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	10	USEPA 625	05/06-05/12/94	4126080
Acenaphthylene	ND	10	USEPA 625	05/06-05/12/94	4126080
Anthracene	ND	10	USEPA 625	05/06-05/12/94	4126080
Benzidine	ND	50	USEPA 625	05/06-05/12/94	4126080
Benzo (a) anthracene	ND	10	USEPA 625	05/06-05/12/94	4126080
Benzo (b) fluoranthene	ND	10	USEPA 625	05/06-05/12/94	4126080
Benzo (k) fluoranthene	ND	10	USEPA 625	05/06-05/12/94	4126080
Benzo (ghi) perylene	ND	10	USEPA 625	05/06-05/12/94	4126080
Benzo (a) pyrene	ND	10	USEPA 625	05/06-05/12/94	4126080
Bis (2-chloroethoxy) methane	ND	10	USEPA 625	05/06-05/12/94	4126080
Bis (2-chloroethyl) ether	ND	10	USEPA 625	05/06-05/12/94	4126080
Bis (2-chloroisopropyl) ether	ND	10	USEPA 625	05/06-05/12/94	4126080
Bis (2-ethylhexyl) phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
4-Bromophenyl phenyl ether	ND	10	USEPA 625	05/06-05/12/94	4126080
Butyl benzyl phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
4-Chloro-3-methylphenol	ND	10	USEPA 625	05/06-05/12/94	4126080
2-Chloronaphthalene	ND	10	USEPA 625	05/06-05/12/94	4126080
2-Chlorophenol	ND	10	USEPA 625	05/06-05/12/94	4126080
4-Chlorophenyl phenyl ether	ND	10	USEPA 625	05/06-05/12/94	4126080
Chrysene	ND	10	USEPA 625	05/06-05/12/94	4126080
Dibenz (a, h) anthracene	ND	10	USEPA 625	05/06-05/12/94	4126080
Di-n-butyl phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
1,2-Dichlorobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080
1,3-Dichlorobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080

SURROGATE RECOVERY

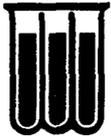
%

ACCEPTABLE LIMITS

Nitrobenzene-d5	71	(26 - 131)
2-Fluorobiphenyl	79	(27 - 119)
Terphenyl-d14	45	(10 - 165)
2-Fluorophenol	75	(10 - 116)
Phenol-d5	61	(10 - 175)
2,4,6-Tribromophenol	92	(10 - 155)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

3557S-TW1

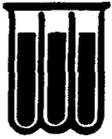
WO #: M7152107
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

- - - - - GC/MS Semi-Volatiles - - - - -

PARAMETER	2 OF 3		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	RESULT (ug/L)	REPORTING LIMIT			
1,4-Dichlorobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080
3,3'-Dichlorobenzidine	ND	50	USEPA 625	05/06-05/12/94	4126080
2,4-Dichlorophenol	ND	10	USEPA 625	05/06-05/12/94	4126080
Diethyl phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
2,4-Dimethylphenol	ND	10	USEPA 625	05/06-05/12/94	4126080
Dimethyl phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
Di-n-octyl phthalate	ND	10	USEPA 625	05/06-05/12/94	4126080
4,6-Dinitro- 2-methylphenol	ND	50	USEPA 625	05/06-05/12/94	4126080
2,4-Dinitrophenol	ND	50	USEPA 625	05/06-05/12/94	4126080
2,4-Dinitrotoluene	ND	10	USEPA 625	05/06-05/12/94	4126080
2,6-Dinitrotoluene	ND	10	USEPA 625	05/06-05/12/94	4126080
1,2-Diphenylhydrazine	ND	10	USEPA 625	05/06-05/12/94	4126080
Fluoranthene	ND	10	USEPA 625	05/06-05/12/94	4126080
Fluorene	ND	10	USEPA 625	05/06-05/12/94	4126080
Hexachlorobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080
Hexachlorobutadiene	ND	10	USEPA 625	05/06-05/12/94	4126080
Hexachlorocyclopentadiene	ND	10	USEPA 625	05/06-05/12/94	4126080
Hexachloroethane	ND	10	USEPA 625	05/06-05/12/94	4126080
Indeno (1,2,3-cd) pyrene	ND	10	USEPA 625	05/06-05/12/94	4126080
Isophorone	ND	10	USEPA 625	05/06-05/12/94	4126080
Naphthalene	ND	10	USEPA 625	05/06-05/12/94	4126080
Nitrobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080
2-Nitrophenol	ND	10	USEPA 625	05/06-05/12/94	4126080
4-Nitrophenol	ND	50	USEPA 625	05/06-05/12/94	4126080
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Nitrobenzene-d5	71	(26 - 131)			
2-Fluorobiphenyl	79	(27 - 119)			
Terphenyl-d14	45	(10 - 165)			
2-Fluorophenol	75	(10 - 116)			
Phenol-d5	61	(10 - 175)			
2,4,6-Tribromophenol	92	(10 - 155)			

**NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT**



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152107
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Semi-Volatiles -----

3 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
N-Nitrosodimethylamine	ND	10	USEPA 625	05/06-05/12/94	4126080
N-Nitrosodi-n-propylamine	ND	10	USEPA 625	05/06-05/12/94	4126080
N-Nitrosodiphenylamine	ND	10	USEPA 625	05/06-05/12/94	4126080
Pentachlorophenol	ND	50	USEPA 625	05/06-05/12/94	4126080
Phenanthrene	ND	10	USEPA 625	05/06-05/12/94	4126080
Phenol	ND	10	USEPA 625	05/06-05/12/94	4126080
Pyrene	ND	10	USEPA 625	05/06-05/12/94	4126080
1,2,4-Trichlorobenzene	ND	10	USEPA 625	05/06-05/12/94	4126080
2,4,6-Trichlorophenol	ND	10	USEPA 625	05/06-05/12/94	4126080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	71	(26 - 131)
2-Fluorobiphenyl	79	(27 - 119)
Terphenyl-d14	45	(10 - 165)
2-Fluorophenol	75	(10 - 116)
Phenol-d5	61	(10 - 175)
2,4,6-Tribromophenol	92	(10 - 155)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

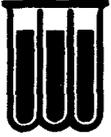
WO #: M7152
 LAB #: B4E040035-007
 MATRIX: WATER

DATE SAMPLED: 5/03/94
 DATE RECEIVED: 5/04/94

- - - - - REQUESTED METALS - - - - -

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Chromium	261	50.0	ug/L	MCAWW 200.7	5/11- 5/12/94	4131011
Arsenic	14.5	5.0	ug/L	MCAWW 206.2	5/11- 5/12/94	4131011
Lead	1,090	100	ug/L	MCAWW 239.2	5/11- 5/12/94	4131011
Cadmium	36.8	5.0	ug/L	SW846 6010	5/11- 5/12/94	4131011

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons Total Recoverable	2.0	1.0	mg/L	MCAWW 418.1	5/10/94	4130061

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

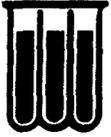
WO #: M7152107
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94
DATE EXTRACTED: 5/06/94
DATE ANALYZED: 5/12/94

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
Hexadecanoic acid, 3,5,5-trimethyl-, 1,2,3-propane	15	ug/L	4126080
2-Unknowns	11	ug/L	4126080
OTHER COMPOUNDS			

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4126080



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

3557S-TW1

WO #: M7152106
LAB #: B4E040035-007
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94
DATE EXTRACTED: 5/07/94
DATE ANALYZED: 5/07/94

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4131052
	OTHER COMPOUNDS		

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4131052



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

WO #: M7154106
 LAB #: B4E040035-009
 MATRIX: WATER

DATE SAMPLED: 5/03/94
 DATE RECEIVED: 5/04/94

PARAMETER	GC/MS Volatiles		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	1 OF RESULT (ug/L)	2 REPORTING LIMIT			
Acrolein	ND	1.0	USEPA 624	05/07/94	4131052
Acrylonitrile	ND	1.0	USEPA 624	05/07/94	4131052
Benzene	ND	1.0	USEPA 624	05/07/94	4131052
Bromodichloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Bromoform	ND	1.0	USEPA 624	05/07/94	4131052
Bromomethane	ND	1.0	USEPA 624	05/07/94	4131052
Carbon tetrachloride	ND	1.0	USEPA 624	05/07/94	4131052
Chlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
Dibromochloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Chloroethane	ND	1.0	USEPA 624	05/07/94	4131052
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	05/07/94	4131052
Chloroform	ND	1.0	USEPA 624	05/07/94	4131052
Chloromethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,3-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,4-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloropropane	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
1,2-Dichloroethane	107	(78 - 130)			
Toluene-d8	98	(90 - 109)			
Bromofluorobenzene	98	(81 - 117)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

WO #: M7154106
 LAB #: B4E040035-009
 MATRIX: WATER

DATE SAMPLED: 5/03/94
 DATE RECEIVED: 5/04/94

----- GC/MS Volatiles -----

PARAMETER	2 OF 2		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	RESULT (ug/L)	REPORTING LIMIT			
Ethylbenzene	ND	1.0	USEPA 624	05/07/94	4131052
Trichlorofluoromethane	ND	1.0	USEPA 624	05/07/94	4131052
Methylene chloride	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Tetrachloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Toluene	ND	1.0	USEPA 624	05/07/94	4131052
1,1,1-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Trichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Vinyl chloride	ND	1.0	USEPA 624	05/07/94	4131052
Xylenes, Total	ND	1.0	USEPA 624	05/07/94	4131052

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane	107	(78 - 130)
Toluene-d8	98	(90 - 109)
Bromofluorobenzene	98	(81 - 117)

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

EQUIPMENT BLANK

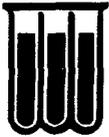
WO #: M7154106
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94
DATE EXTRACTED: 5/07/94
DATE ANALYZED: 5/07/94

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	QC <u>BATCH</u>
None		--	4131052
	OTHER COMPOUNDS		

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	QC <u>BATCH</u>
None		--	4131052



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

WO #: M7154107
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

- - - - - GC/MS Semi-Volatiles - - - - -

<u>PARAMETER</u>	1 OF 3		<u>METHOD</u>	<u>EXTRACTION- ANALYSIS DATE</u>	<u>QC BATCH</u>
	<u>RESULT (ug/L)</u>	<u>REPORTING LIMIT</u>			
Acenaphthene	ND	10	USEPA 625	05/06-05/14/94	4126080
Acenaphthylene	ND	10	USEPA 625	05/06-05/14/94	4126080
Anthracene	ND	10	USEPA 625	05/06-05/14/94	4126080
Benzidine	ND	50	USEPA 625	05/06-05/14/94	4126080
Benzo (a) anthracene	ND	10	USEPA 625	05/06-05/14/94	4126080
Benzo (b) fluoranthene	ND	10	USEPA 625	05/06-05/14/94	4126080
Benzo (k) fluoranthene	ND	10	USEPA 625	05/06-05/14/94	4126080
Benzo (ghi) perylene	ND	10	USEPA 625	05/06-05/14/94	4126080
Benzo (a) pyrene	ND	10	USEPA 625	05/06-05/14/94	4126080
Bis (2-chloroethoxy) methane	ND	10	USEPA 625	05/06-05/14/94	4126080
Bis (2-chloroethyl) ether	ND	10	USEPA 625	05/06-05/14/94	4126080
Bis (2-chloroisopropyl) ether	ND	10	USEPA 625	05/06-05/14/94	4126080
Bis (2-ethylhexyl) phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
4-Bromophenyl phenyl ether	ND	10	USEPA 625	05/06-05/14/94	4126080
Butyl benzyl phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
4-Chloro-3-methylphenol	ND	10	USEPA 625	05/06-05/14/94	4126080
2-Chloronaphthalene	ND	10	USEPA 625	05/06-05/14/94	4126080
2-Chlorophenol	ND	10	USEPA 625	05/06-05/14/94	4126080
4-Chlorophenyl phenyl ether	ND	10	USEPA 625	05/06-05/14/94	4126080
Chrysene	ND	10	USEPA 625	05/06-05/14/94	4126080
Dibenz (a, h) anthracene	ND	10	USEPA 625	05/06-05/14/94	4126080
Di-n-butyl phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
1,2-Dichlorobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
1,3-Dichlorobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
<u>SURROGATE RECOVERY</u>	<u>‡</u>	<u>ACCEPTABLE LIMITS</u>			
Nitrobenzene-d5	64	(26 - 131)			
2-Fluorobiphenyl	69	(27 - 119)			
Terphenyl-d14	116	(10 - 165)			
2-Fluorophenol	73	(10 - 116)			
Phenol-d5	59	(10 - 175)			
2,4,6-Tribromophenol	82	(10 - 155)			

**NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT**



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

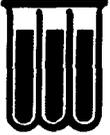
WO #: M7154107
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Semi-Volatiles -----					
PARAMETER	2 OF 3		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	RESULT (ug/L)	REPORTING LIMIT			
1,4-Dichlorobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
3,3'-Dichlorobenzidine	ND	50	USEPA 625	05/06-05/14/94	4126080
2,4-Dichlorophenol	ND	10	USEPA 625	05/06-05/14/94	4126080
Diethyl phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
2,4-Dimethylphenol	ND	10	USEPA 625	05/06-05/14/94	4126080
Dimethyl phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
Di-n-octyl phthalate	ND	10	USEPA 625	05/06-05/14/94	4126080
4,6-Dinitro- 2-methylphenol	ND	50	USEPA 625	05/06-05/14/94	4126080
2,4-Dinitrophenol	ND	50	USEPA 625	05/06-05/14/94	4126080
2,4-Dinitrotoluene	ND	10	USEPA 625	05/06-05/14/94	4126080
2,6-Dinitrotoluene	ND	10	USEPA 625	05/06-05/14/94	4126080
1,2-Diphenylhydrazine	ND	10	USEPA 625	05/06-05/14/94	4126080
Fluoranthene	ND	10	USEPA 625	05/06-05/14/94	4126080
Fluorene	ND	10	USEPA 625	05/06-05/14/94	4126080
Hexachlorobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
Hexachlorobutadiene	ND	10	USEPA 625	05/06-05/14/94	4126080
Hexachlorocyclopentadiene	ND	10	USEPA 625	05/06-05/14/94	4126080
Hexachloroethane	ND	10	USEPA 625	05/06-05/14/94	4126080
Indeno (1,2,3-cd)pyrene	ND	10	USEPA 625	05/06-05/14/94	4126080
Isophorone	ND	10	USEPA 625	05/06-05/14/94	4126080
Naphthalene	ND	10	USEPA 625	05/06-05/14/94	4126080
Nitrobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
2-Nitrophenol	ND	10	USEPA 625	05/06-05/14/94	4126080
4-Nitrophenol	ND	50	USEPA 625	05/06-05/14/94	4126080
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Nitrobenzene-d5	64	(26 - 131)			
2-Fluorobiphenyl	69	(27 - 119)			
Terphenyl-d14	116	(10 - 165)			
2-Fluorophenol	73	(10 - 116)			
Phenol-d5	59	(10 - 175)			
2,4,6-Tribromophenol	82	(10 - 155)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

WO #: M7154107
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Semi-Volatiles -----

3 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> LIMIT	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> BATCH
N-Nitrosodimethylamine	ND	10	USEPA 625	05/06-05/14/94	4126080
N-Nitrosodi-n-propylamine	ND	10	USEPA 625	05/06-05/14/94	4126080
N-Nitrosodiphenylamine	ND	10	USEPA 625	05/06-05/14/94	4126080
Pentachlorophenol	ND	50	USEPA 625	05/06-05/14/94	4126080
Phenanthrene	ND	10	USEPA 625	05/06-05/14/94	4126080
Phenol	ND	10	USEPA 625	05/06-05/14/94	4126080
Pyrene	ND	10	USEPA 625	05/06-05/14/94	4126080
1,2,4-Trichlorobenzene	ND	10	USEPA 625	05/06-05/14/94	4126080
2,4,6-Trichlorophenol	ND	10	USEPA 625	05/06-05/14/94	4126080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	64	(26 - 131)
2-Fluorobiphenyl	69	(27 - 119)
Terphenyl-d14	116	(10 - 165)
2-Fluorophenol	73	(10 - 116)
Phenol-d5	59	(10 - 175)
2,4,6-Tribromophenol	82	(10 - 155)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

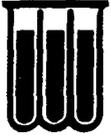
WO #: M7154107
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94
DATE EXTRACTED: 5/06/94
DATE ANALYZED: 5/14/94

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
1-Unknown	4	ug/L	4126080
	OTHER COMPOUNDS		

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4126080



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

WO #: M7154
LAB #: B4E040035-009
MATRIX: WATER

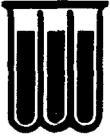
DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Chromium	ND	50.0	ug/L	MCAWW 200.7	5/11- 5/12/94	4131011
Arsenic	ND	5.0	ug/L	MCAWW 206.2	5/11- 5/12/94	4131011
Lead	ND	5.0	ug/L	MCAWW 239.2	5/11- 5/12/94	4131011
Cadmium	ND	5.0	ug/L	SW846 6010	5/11- 5/12/94	4131011

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

EQUIPMENT BLANK

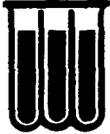
WO #: M7154
LAB #: B4E040035-009
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	5/10/94	4130061

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: M7155101
LAB #: B4E040035-010
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Volatiles -----

1 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acrolein	ND	10	USEPA 624	05/07/94	4131052
Acrylonitrile	ND	10	USEPA 624	05/07/94	4131052
Benzene	ND	1.0	USEPA 624	05/07/94	4131052
Bromodichloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Bromoform	ND	1.0	USEPA 624	05/07/94	4131052
Bromomethane	ND	1.0	USEPA 624	05/07/94	4131052
Carbon tetrachloride	ND	1.0	USEPA 624	05/07/94	4131052
Chlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
Dibromochloromethane	ND	1.0	USEPA 624	05/07/94	4131052
Chloroethane	ND	1.0	USEPA 624	05/07/94	4131052
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	05/07/94	4131052
Chloroform	ND	1.0	USEPA 624	05/07/94	4131052
Chloromethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,3-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,4-Dichlorobenzene	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,2-Dichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
1,2-Dichloropropane	ND	1.0	USEPA 624	05/07/94	4131052
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	05/07/94	4131052

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane	107	(78 - 130)
Toluene-d8	102	(90 - 109)
Bromofluorobenzene	101	(81 - 117)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: M7155101
LAB #: B4E040035-010
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94

----- GC/MS Volatiles -----
2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> LIMIT	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> BATCH
Ethylbenzene	ND	1.0	USEPA 624	05/07/94	4131052
Trichlorofluoromethane	ND	1.0	USEPA 624	05/07/94	4131052
Methylene chloride	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Tetrachloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Toluene	ND	1.0	USEPA 624	05/07/94	4131052
1,1,1-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
1,1,2-Trichloroethane	ND	1.0	USEPA 624	05/07/94	4131052
Trichloroethene	ND	1.0	USEPA 624	05/07/94	4131052
Vinyl chloride	ND	1.0	USEPA 624	05/07/94	4131052
Xylenes, Total	ND	1.0	USEPA 624	05/07/94	4131052

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane	107	(78 - 130)
Toluene-d8	102	(90 - 109)
Bromofluorobenzene	101	(81 - 117)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

TRIP BLANK

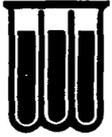
WO #: M7155101
LAB #: B4E040035-010
MATRIX: WATER

DATE SAMPLED: 5/03/94
DATE RECEIVED: 5/04/94
DATE EXTRACTED: 5/07/94
DATE ANALYZED: 5/07/94

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4131052
	OTHER COMPOUNDS		

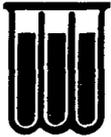
<u>PARAMETER</u>	<u>RESULT</u>	<u>UNIT</u>	<u>QC BATCH</u>
None		--	4131052



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT

Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



ENSECO-WADSWORTH/ALERT

Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

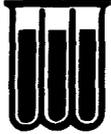
Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



LAB #: B4E110000-052

----- GC/MS Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acrolein	ND	10	5/07/94	4131052
Acrylonitrile	ND	10	5/07/94	4131052
Benzene	ND	1.0	5/07/94	4131052
Bromodichloromethane	ND	1.0	5/07/94	4131052
Bromoform	ND	1.0	5/07/94	4131052
Bromomethane	ND	1.0	5/07/94	4131052
Carbon tetrachloride	ND	1.0	5/07/94	4131052
Chlorobenzene	ND	1.0	5/07/94	4131052
Dibromochloromethane	ND	1.0	5/07/94	4131052
Chloroethane	ND	1.0	5/07/94	4131052
2-Chloroethyl vinyl ether	ND	1.0	5/07/94	4131052
Chloroform	ND	1.0	5/07/94	4131052
Chloromethane	ND	1.0	5/07/94	4131052
1,2-Dichlorobenzene	ND	1.0	5/07/94	4131052
1,3-Dichlorobenzene	ND	1.0	5/07/94	4131052
1,4-Dichlorobenzene	ND	1.0	5/07/94	4131052
1,1-Dichloroethane	ND	1.0	5/07/94	4131052
1,2-Dichloroethane	ND	1.0	5/07/94	4131052
1,1-Dichloroethene	ND	1.0	5/07/94	4131052
cis-1,2-Dichloroethene	ND	1.0	5/07/94	4131052
trans-1,2-Dichloroethene	ND	1.0	5/07/94	4131052
1,2-Dichloropropane	ND	1.0	5/07/94	4131052
cis-1,3-Dichloropropene	ND	1.0	5/07/94	4131052
trans-1,3-Dichloropropene	ND	1.0	5/07/94	4131052
Ethylbenzene	ND	1.0	5/07/94	4131052
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
1,2-Dichloroethane	103	(78 - 130)		
Toluene-d8	99	(90 - 109)		
Bromofluorobenzene	98	(81 - 117)		

NOTE:

ND (NONE DETECTED)



LAB #: B4E110000-052

----- GC/MS Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Trichlorofluoromethane	ND	1.0	5/07/94	4131052
Methylene chloride	ND	1.0	5/07/94	4131052
1,1,2,2-Tetrachloroethane	ND	1.0	5/07/94	4131052
Tetrachloroethene	ND	1.0	5/07/94	4131052
Toluene	ND	1.0	5/07/94	4131052
1,1,1-Trichloroethane	ND	1.0	5/07/94	4131052
1,1,2-Trichloroethane	ND	1.0	5/07/94	4131052
Trichloroethene	ND	1.0	5/07/94	4131052
Vinyl chloride	ND	1.0	5/07/94	4131052
Xylenes, Total	ND	1.0	5/07/94	4131052

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane	103	(78 - 130)
Toluene-d8	99	(90 - 109)
Bromofluorobenzene	98	(81 - 117)

NOTE:

ND (NONE DETECTED)



LAB #: B4E060000-080

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	10	5/06- 5/13/94	4126080
Acenaphthylene	ND	10	5/06- 5/13/94	4126080
Anthracene	ND	10	5/06- 5/13/94	4126080
Benzidine	ND	50	5/06- 5/13/94	4126080
Benzo (a) anthracene	ND	10	5/06- 5/13/94	4126080
Benzo (b) fluoranthene	ND	10	5/06- 5/13/94	4126080
Benzo (k) fluoranthene	ND	10	5/06- 5/13/94	4126080
Benzo (ghi) perylene	ND	10	5/06- 5/13/94	4126080
Benzo (a) pyrene	ND	10	5/06- 5/13/94	4126080
Bis (2-chloroethoxy) methane	ND	10	5/06- 5/13/94	4126080
Bis (2-chloroethyl) ether	ND	10	5/06- 5/13/94	4126080
Bis (2-chloroisopropyl) ether	ND	10	5/06- 5/13/94	4126080
Bis (2-ethylhexyl) phthalate	ND	10	5/06- 5/13/94	4126080
4-Bromophenyl phenyl ether	ND	10	5/06- 5/13/94	4126080
Butyl benzyl phthalate	ND	10	5/06- 5/13/94	4126080
4-Chloro-3-methylphenol	ND	10	5/06- 5/13/94	4126080
2-Chloronaphthalene	ND	10	5/06- 5/13/94	4126080
2-Chlorophenol	ND	10	5/06- 5/13/94	4126080
4-Chlorophenyl phenyl ether	ND	10	5/06- 5/13/94	4126080
Chrysene	ND	10	5/06- 5/13/94	4126080
Dibenz (a, h) anthracene	ND	10	5/06- 5/13/94	4126080
Di-n-butyl phthalate	ND	10	5/06- 5/13/94	4126080
1,2-Dichlorobenzene	ND	10	5/06- 5/13/94	4126080
1,3-Dichlorobenzene	ND	10	5/06- 5/13/94	4126080
1,4-Dichlorobenzene	ND	10	5/06- 5/13/94	4126080
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Nitrobenzene-d5	76	(26 - 131)		
2-Fluorobiphenyl	82	(27 - 119)		
Terphenyl-d14	117	(10 - 165)		
2-Fluorophenol	84	(10 - 116)		
Phenol-d5	68	(10 - 175)		
2,4,6-Tribromophenol	74	(10 - 155)		

NOTE:

ND (NONE DETECTED)



LAB #: B4E060000-080

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
3,3'-Dichlorobenzidine	ND	50	5/06- 5/13/94	4126080
2,4-Dichlorophenol	ND	10	5/06- 5/13/94	4126080
Diethyl phthalate	ND	10	5/06- 5/13/94	4126080
2,4-Dimethylphenol	ND	10	5/06- 5/13/94	4126080
Dimethyl phthalate	ND	10	5/06- 5/13/94	4126080
Di-n-octyl phthalate	ND	10	5/06- 5/13/94	4126080
4,6-Dinitro- 2-methylphenol	ND	50	5/06- 5/13/94	4126080
2,4-Dinitrophenol	ND	50	5/06- 5/13/94	4126080
2,4-Dinitrotoluene	ND	10	5/06- 5/13/94	4126080
2,6-Dinitrotoluene	ND	10	5/06- 5/13/94	4126080
1,2-Diphenylhydrazine	ND	10	5/06- 5/13/94	4126080
Fluoranthene	ND	10	5/06- 5/13/94	4126080
Fluorene	ND	10	5/06- 5/13/94	4126080
Hexachlorobenzene	ND	10	5/06- 5/13/94	4126080
Hexachlorobutadiene	ND	10	5/06- 5/13/94	4126080
Hexachlorocyclopentadiene	ND	10	5/06- 5/13/94	4126080
Hexachloroethane	ND	10	5/06- 5/13/94	4126080
Indeno (1,2,3-cd) pyrene	ND	10	5/06- 5/13/94	4126080
Isophorone	ND	10	5/06- 5/13/94	4126080
Naphthalene	ND	10	5/06- 5/13/94	4126080
Nitrobenzene	ND	10	5/06- 5/13/94	4126080
2-Nitrophenol	ND	10	5/06- 5/13/94	4126080
4-Nitrophenol	ND	50	5/06- 5/13/94	4126080
N-Nitrosodimethylamine	ND	10	5/06- 5/13/94	4126080
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Nitrobenzene-d5	76	(26 - 131)		
2-Fluorobiphenyl	82	(27 - 119)		
Terphenyl-d14	117	(10 - 165)		
2-Fluorophenol	84	(10 - 116)		
Phenol-d5	68	(10 - 175)		
2,4,6-Tribromophenol	74	(10 - 155)		

NOTE:

ND (NONE DETECTED)



LAB #: B4E060000-080

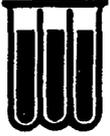
----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
N-Nitrosodi-n-propylamine	ND	10	5/06- 5/13/94	4126080
N-Nitrosodiphenylamine	ND	10	5/06- 5/13/94	4126080
Pentachlorophenol	ND	50	5/06- 5/13/94	4126080
Phenanthrene	ND	10	5/06- 5/13/94	4126080
Phenol	ND	10	5/06- 5/13/94	4126080
Pyrene	ND	10	5/06- 5/13/94	4126080
1,2,4-Trichlorobenzene	ND	10	5/06- 5/13/94	4126080
2,4,6-Trichlorophenol	ND	10	5/06- 5/13/94	4126080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	76	(26 - 131)
2-Fluorobiphenyl	82	(27 - 119)
Terphenyl-d14	117	(10 - 165)
2-Fluorophenol	84	(10 - 116)
Phenol-d5	68	(10 - 175)
2,4,6-Tribromophenol	74	(10 - 155)

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

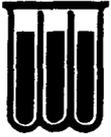
LAB #: B4E040035

----- METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
		BATCH:4131011			
Arsenic	ND	5.0	ug/L	MCAWW 206.2	5/11/94
Cadmium	ND	5.0	ug/L	SW846 6010	5/11- 5/12/94
Chromium	ND	50.0	ug/L	MCAWW 200.7	5/11- 5/12/94
Lead	ND	5.0	ug/L	MCAWW 239.2	5/11/94

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4E100000-061

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons	ND	1.0	mg/L	5/10/94	4130061

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/ALERT
Laboratories

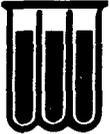
CHECK SAMPLE REPORT

QC BATCH: 4131052
LAB #: B4E110000-052 C

PREPARATION DATE: 5/07/94
DATE ANALYZED: 5/07/94

----- GC/MS Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Chloromethane	80	(52-146)
Vinyl chloride	104	(49-145)
Bromomethane	102	(69-145)
Chloroethane	103	(60-132)
1,1-Dichloroethene	87	(72-114)
Acetone	46	(48-130)
Carbon disulfide	107	(50-129)
Dichloromethane	90	(76-116)
trans-1,2-Dichloroethene	93	(57-129)
1,1-Dichloroethane	93	(56-116)
Vinyl acetate	69	(19-162)
2-Butanone	42	(38-142)
Chloroform	101	(58-127)
1,1,1-Trichloroethane	96	(53-134)
Carbon tetrachloride	98	(49-138)
Benzene	102	(79-115)
1,2-Dichloroethane	97	(68-132)
Trichloroethene	95	(78-116)
1,2-Dichloropropane	93	(65-119)
Bromodichloromethane	96	(66-113)
2-Chloroethyl vinyl ether	103	(60-126)
4-Methyl-2-pentanone	89	(52-131)
trans-1,3-Dichloropropene	96	(61-136)
Toluene	99	(78-116)
cis-1,3-Dichloropropene	91	(52-112)
1,1,2-Trichloroethane	96	(69-122)
2-Hexanone	89	(57-127)
Tetrachloroethene	102	(78-126)
Dibromochloromethane	97	(54-122)
Chlorobenzene	103	(80-122)
Ethylbenzene	100	(81-123)
Xylenes, Total	103	(78-125)
Styrene	102	(62-139)
Bromoform	92	(48-131)
1,1,2,2-Tetrachloroethane	96	(67-122)



ENSECO-WADSWORTH/ALERT
Laboratories

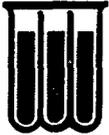
CHECK SAMPLE REPORT

QC BATCH: 4126080
LAB #: B4E060000-080 C

PREPARATION DATE: 5/06/94
DATE ANALYZED: 5/13/94

GC/MS Semi-Volatiles

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Phenol	81	(17-105)
Bis(2-chloroethyl) ether	87	(28-121)
2-Chlorophenol	90	(22-106)
1,3-Dichlorobenzene	97	(33-114)
1,4-Dichlorobenzene	94	(20-116)
Benzyl alcohol	97	(22-122)
1,2-Dichlorobenzene	88	(34-110)
2-Methylphenol	84	(37-88)
Bis(2-chloroisopropyl) ether	80	(10-146)
4-Methylphenol	83	(31-98)
N-Nitrosodi-n-propylamine	82	(16-147)
Hexachloroethane	87	(35-105)
Nitrobenzene	89	(27-127)
Isophorone	78	(13-134)
2-Nitrophenol	99	(19-113)
2,4-Dimethylphenol	84	(14-98)
Benzoic acid	100	(20-144)
Bis(2-chloroethoxy) methane	89	(35-115)
2,4-Dichlorophenol	92	(17-113)
1,2,4-Trichlorobenzene	91	(21-117)
Naphthalene	97	(22-151)
4-Chloroaniline	84	(14-181)
Hexachlorobutadiene	86	(43-101)
4-Chloro-3-methylphenol	88	(13-114)
1-Methylnaphthalene	91	(33-120)
2-Methylnaphthalene	91	(39-113)
Hexachlorocyclopentadiene	63	(10-110)
2,4,6-Trichlorophenol	90	(30-108)
2,4,5-Trichlorophenol	98	(36-90)
2-Chloronaphthalene	95	(38-106)
2-Nitroaniline	101	(22-108)
Dimethyl phthalate	35	(10-110)
Acenaphthylene	96	(17-145)
2,6-Dinitrotoluene	99	(24-128)
3-Nitroaniline	111	(26-99)
Acenaphthene	98	(30-150)
2,4-Dinitrophenol	118	(10-92)
4-Nitrophenol	104	(10-150)
Dibenzofuran	99	(34-104)
2,4-Dinitrotoluene	98	(33-113)
Diethyl phthalate	52	(10-110)



ENSECO-WADSWORTH/ALERT
Laboratories

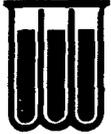
CHECK SAMPLE REPORT

QC BATCH: 4126080
LAB #: B4E060000-080 C

PREPARATION DATE: 5/06/94
DATE ANALYZED: 5/13/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
4-Chlorophenyl phenyl ether	93	(10-180)
Fluorene	95	(24-117)
4-Nitroaniline	113	(12-141)
4,6-Dinitro- 2-methylphenol	117	(10-142)
N-Nitrosodiphenylamine	105	(37-134)
4-Bromophenyl phenyl ether	98	(18-144)
Hexachlorobenzene	95	(10-180)
Pentachlorophenol	105	(10-121)
Phenanthrene	99	(26-126)
Anthracene	101	(20-117)
Di-n-butyl phthalate	91	(31-111)
Fluoranthene	99	(29-118)
Pyrene	113	(34-125)
Butyl benzyl phthalate	91	(25-121)
3,3'-Dichlorobenzidine	122	(10-146)
Benzo(a)anthracene	107	(31-115)
Chrysene	100	(18-140)
Bis(2-ethylhexyl)phthalate	104	(27-128)
Di-n-octyl phthalate	111	(17-160)
Benzo(b)fluoranthene	110	(12-119)
Benzo(k)fluoranthene	102	(23-134)
Benzo(a)pyrene	106	(40-115)
Indeno(1,2,3-cd)pyrene	107	(22-95)
Dibenzo(a,h)anthracene	104	(10-93)
Benzo(ghi)perylene	109	(10-103)



ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4E040035

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH: 4131011		
Arsenic	109	(71-119)	5/11/94
Cadmium	92	(80-113)	5/11- 5/12/94
Chromium	96	(79-120)	5/11- 5/12/94
Lead	105	(70-126)	5/11/94



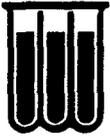
ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4E040035

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons Total Recoverable	98	(69-125)	5/09- 5/10/94	4130061



ENSECO-WADSWORTH/ALERT
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4131052
LAB #: B4E040035-001 S
MATRIX: WATER

WO #: M7137
PREPARATION DATE: 5/07/94
DATE ANALYZED: 5/07/94

----- GC/MS Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Chloromethane	71	79	(41-160)	11	(0-20)
Vinyl chloride	101	107	(56-152)	5.4	(0-24)
Bromomethane	98	107	(87-110)	9.1	(0-11)
Chloroethane	86	83	(80-121)	2.7	(0-18)
1,1-Dichloroethene	81	82	(63-123)	1.6	(0-19)
Acetone	39	47	(87-115)	18	(0-15)
Carbon disulfide	93	100	(81-125)	7.3	(0-9)
Dichloromethane	86	95	(77-135)	10	(0-19)
trans-1,2-Dichloroethene	86	91	(79-109)	5.6	(0-12)
1,1-Dichloroethane	86	93	(82-109)	8.2	(0-12)
Vinyl acetate	52	60	(83-125)	13	(0-21)
2-Butanone	35	43	(14-126)	19	(0-36)
Chloroform	98	107	(87-111)	8.8	(0-15)
1,1,1-Trichloroethane	95	99	(81-110)	4.0	(0-13)
Carbon tetrachloride	98	101	(77-125)	3.4	(0-12)
Benzene	97	102	(76-126)	4.7	(0-16)
1,2-Dichloroethane	97	104	(76-128)	6.7	(0-17)
Trichloroethene	89	95	(75-115)	6.3	(0-10)
1,2-Dichloropropane	88	94	(88-118)	6.6	(0-15)
Bromodichloromethane	96	105	(67-114)	8.8	(0-15)
2-Chloroethyl vinyl ether	0	0	(61-125)	0	(0-20)
4-Methyl-2-pentanone	80	86	(63-133)	8.2	(0-23)
trans-1,3-Dichloropropene	88	95	(84-109)	7.9	(0-12)
Toluene	96	103	(75-122)	7.1	(0-23)
cis-1,3-Dichloropropene	83	89	(84-109)	6.6	(0-12)
1,1,2-Trichloroethane	94	99	(84-114)	5.1	(0-14)
2-Hexanone	82	87	(85-123)	6.0	(0-18)
Tetrachloroethene	95	97	(81-110)	2.4	(0-14)
Dibromochloromethane	104	106	(79-125)	2.6	(0-8)
Chlorobenzene	102	107	(74-113)	5.1	(0-13)
Ethylbenzene	100	106	(85-115)	6.3	(0-14)
Xylenes, Total	98	104	(83-118)	5.6	(0-17)
Styrene	93	100	(81-111)	7.5	(0-16)
Bromoform	93	98	(66-125)	5.1	(0-8)
1,1,2,2-Tetrachloroethane	96	100	(77-111)	4.7	(0-17)

Calculations are performed before rounding to avoid round-off errors in calculated results



ENSECO-WADSWORTH/ALERT
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4126080
LAB #: B4E040035-006 S
MATRIX: WATER

WO #: M7151
PREPARATION DATE: 5/06/94
DATE ANALYZED: 5/12/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Phenol	65	75	(15-97)	15	(0-23)
Bis(2-chloroethyl) ether	95	94	(22-94)	0.88	(0-30)
2-Chlorophenol	75	84	(17-89)	11	(0-21)
1,3-Dichlorobenzene	97	110	(16-55)	13	(0-20)
1,4-Dichlorobenzene	87	102	(16-56)	16	(0-20)
Benzyl alcohol	0	0	(28-142)	0	(0-36)
1,2-Dichlorobenzene	88	102	(17-56)	15	(0-20)
2-Methylphenol	0	0	(20-95)	0	(0-26)
Bis(2-chloroisopropyl) ether	90	99	(34-114)	10	(0-26)
4-Methylphenol	0	0	(10-85)	0	(0-32)
N-Nitrosodi-n-propylamine	93	104	(40-127)	12	(0-29)
Hexachloroethane	85	99	(13-70)	15	(0-12)
Nitrobenzene	94	108	(23-62)	14	(0-15)
Isophorone	84	90	(26-65)	7.4	(0-15)
2-Nitrophenol	96	103	(31-100)	6.9	(0-20)
2,4-Dimethylphenol	85	93	(24-77)	9.4	(0-24)
Benzoic acid	0	0	(16-72)	0	(0-34)
Bis(2-chloroethoxy) methane	90	98	(40-98)	9.4	(0-25)
2,4-Dichlorophenol	87	93	(26-103)	7.0	(0-36)
1,2,4-Trichlorobenzene	88	94	(27-65)	6.3	(0-15)
Naphthalene	84	99	(25-97)	16	(0-23)
4-Chloroaniline	0	0	(43-91)	0	(0-17)
Hexachlorobutadiene	79	84	(16-88)	6.6	(0-21)
4-Chloro-3-methylphenol	86	93	(8.0-101)	7.9	(0-36)
1-Methylnaphthalene	87	93	(48-101)	7.4	(0-24)
2-Methylnaphthalene	86	93	(43-82)	7.8	(0-15)
Hexachlorocyclopentadiene	45	45	(2.0-55)	1.9	(0-31)
2,4,6-Trichlorophenol	101	103	(20-112)	1.9	(0-36)
2,4,5-Trichlorophenol	0	0	(20-159)	0	(0-33)
2-Chloronaphthalene	94	102	(22-77)	7.8	(0-21)
2-Nitroaniline	0	0	(52-170)	0	(0-39)
Dimethyl phthalate	25	24	(19-105)	3.1	(0-28)
Acenaphthylene	97	102	(57-104)	4.5	(0-19)
2,6-Dinitrotoluene	112	117	(19-86)	4.3	(0-24)
3-Nitroaniline	0	0	(55-172)	0	(0-39)
Acenaphthene	96	102	(57-104)	5.6	(0-24)
2,4-Dinitrophenol	132	114	(9.0-96)	14	(0-34)
4-Nitrophenol	108	108	(13-99)	0.10	(0-34)
Dibenzofuran	0	0	(85-117)	0	(0-11)



ENSECO-WADSWORTH/ALERT
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4126080
LAB #: B4E040035-006 S
MATRIX: WATER

WO #: M7151
PREPARATION DATE: 5/06/94
DATE ANALYZED: 5/12/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
2,4-Dinitrotoluene	103	106	(22-81)	2.6	(0-22)
Diethyl phthalate	44	43	(28-106)	2.2	(0-26)
4-Chlorophenyl phenyl ether	90	90	(41-109)	0.31	(0-37)
Fluorene	96	100	(34-118)	4.5	(0-28)
4-Nitroaniline	0	0	(74-195)	0	(0-48)
4,6-Dinitro- 2-methylphenol	121	122	(29-99)	0.85	(0-35)
N-Nitrosodiphenylamine	111	121	(37-134)	8.2	(0-32)
4-Bromophenyl phenyl ether	90	94	(50-116)	3.9	(0-33)
Hexachlorobenzene	91	92	(14-98)	1.8	(0-36)
Pentachlorophenol	101	104	(13-96)	3.5	(0-42)
Phenanthrene	99	103	(36-118)	4.2	(0-27)
Anthracene	93	99	(39-124)	6.1	(0-28)
Di-n-butyl phthalate	85	83	(28-103)	1.6	(0-25)
Fluoranthene	93	96	(60-120)	3.0	(0-30)
Pyrene	101	105	(58-148)	4.4	(0-30)
Butyl benzyl phthalate	85	81	(7.0-122)	5.3	(0-38)
3,3'-Dichlorobenzidine	8.9	16	(46-127)	56	(0-40)
Benzo(a)anthracene	100	102	(36-128)	2.4	(0-31)
Chrysene	94	96	(48-118)	2.1	(0-36)
Bis(2-ethylhexyl)phthalate	99	101	(11-100)	1.9	(0-35)
Di-n-octyl phthalate	95	100	(14-93)	5.2	(0-31)
Benzo(b)fluoranthene	89	80	(43-108)	11	(0-22)
Benzo(k)fluoranthene	81	87	(28-126)	6.8	(0-33)
Benzo(a)pyrene	85	90	(35-117)	5.6	(0-27)
Indeno(1,2,3-cd)pyrene	84	83	(33-194)	1.7	(0-41)
Dibenzo(a,h)anthracene	85	84	(32-180)	1.3	(0-37)
Benzo(ghi)perylene	86	85	(29-232)	0.83	(0-51)



LAB #: B4E040035-006

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:4131011 MATRIX: WATER					
Arsenic	5.2	6.2	(80-119)	1.0	(0-10) +	5/11- 5/12/94
Cadmium	92	92	(80-120)	0.25	(0-20)	5/11- 5/12/94
Chromium	90	89	(74-117)	0.33	(0-21)	5/11- 5/12/94
Lead	DIL					5/11- 5/12/94

NOTE:

DIL Diluted out

+ THE CORRECTIVE ACTION CRITERIA IS BASED UPON THE ABSOLUTE DIFFERENCE OF THE MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES.

Calculations are performed before rounding to avoid round-off errors in calculated results

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB-ES Project Name/Number: 7528-45

Samples Received By: Earl A. Eckert Date Received: 5/4/94
(Signature)

Sample Evaluation Form By: Earl A. Eckert LAB No: B4E040035
(Signature)

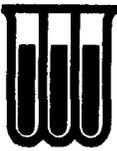
Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were custody papers properly included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were custody papers properly filled out (ink, signed, match labels)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Were correct bottles used for the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were proper sample preservation techniques indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Were samples received within adequate holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Were samples accepted into the laboratory? (If no see comments)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler # Temp 4 °C Cooler # Temp °C
 Cooler # Temp 6 °C Cooler # Temp °C

Comments: VOL 624 NADEP/607/NE - air bubble



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record 1 of 1
10570

Client: <u>AIP-ES</u>		Project Name / Location: <u>1111 Pa ...</u>			No Of CONTAINERS	Parameter										Remarks
Sampler(s): <u>Regen. D. ...</u>		Project #: <u>7-28-95</u>				VOC-124	PAH-625	METALS-641	TRPH-4124	EDB-						
Item #	Date	Time	MATRIX	Sample Location												
1	5-3-94	7:30	H ₂ O	EQUIPMENT BLANK	6	2	1	1								
2		7:45		609NE-MW1	3	2		1								
3		7:55		609NE-MW5	3	2		1								
4		8:05		609NE-MW1	3	2		1								
5		8:10		609NE-MW2	3	2		1								
6		8:15		609NE-MW3	3	2		1								
7		—		DUPLICATE	3	2		1								
8		8:20		609NE-TW1	6	2	2	1								
9		8:30		35575-TW1	6	2	2	1								
10		—		TWIP BLANK	3	3										
11		—		TEMP BLANK	2											

Total Containers **41**

Number of Coolers in Shipment **2**

Bailers **11**

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
<u>KAREN HARTNETT</u>	1	1-11	<u>P. WALKER / AIP-ES</u>	<u>FED ZA</u>		
<u>624: 418.1 preserved w/ HCL.</u>	2	1-11		<u>Carla E. ...</u>	<u>7/4/94</u>	<u>9:30</u>
<u>METALS preserved w/ HNO₃.</u>	3					
<u>STANDARD TURNAROUND TIME.</u>	4					
	5					
	6					

Original Accompanies Shipment

**MONITORING WELLS MW-2, MW-3, AND MW-6
JUNE 10, 1994**



ENSECO-WADSWORTH/ALERT Laboratories

Division of Corning Lab Services Inc

5910 Breckenridge Parkway, Suite H
Tampa, FL 33610

813-621-0784
FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NO. 7527.45

NADEP PENSACOLA 3557S

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES
Certification Numbers: E84059, HRS84297
FDEP CompQAP: 870270G

Chris Amstutz ^{ner}

Chris Amstutz
Project Manager

June 16, 1994



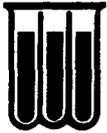
ENSECO-WADSWORTH/ALERT

Lab 21019

EXECUTIVE SUMMARY - Detection Highlights

B4F110004

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>
PEN-3557S-MW2				
Lead	14.0	5.0	ug/L	MCAWW 239.2
PEN-3557S-MW3				
Lead	14.5	5.0	ug/L	MCAWW 239.2
PEN-3557S-MW6				
Lead	23.0	5.0	ug/L	MCAWW 239.2
SB30A-1.5				
Petroleum Hydrocarbons Total Recoverable	392	12.6	mg/kg	MCAWW 418.1
Solids, Total (TS)	79.6	1.0	%	MCAWW 160.3
SB33A-1.5				
Petroleum Hydrocarbons Total Recoverable	81.2	5.6	mg/kg	MCAWW 418.1
Solids, Total (TS)	89.4	1.0	%	MCAWW 160.3



ENSECO-WADSWORTH/ALERT

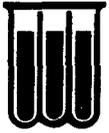
Laboratory

ANALYTICAL METHODS SUMMARY

<u>Parameters</u>	<u>Methods</u>
Cadmium	MCAWW 200.7
Chromium	MCAWW 200.7
Arsenic	MCAWW 206.2
Lead	MCAWW 239.2
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1 MODIFIED
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

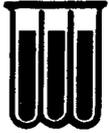
MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
Cincinnati, OH: March 1983 and its updates.



ENSECO-WADSWORTH/ALERT **SAMPLE SUMMARY**
Laboratories

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
00686	B4F110004-001	PEN-3557S-MW2
00687	B4F110004-002	PEN-3557S-MW2
00688	B4F110004-003	PEN-3557S-MW3
00689	B4F110004-004	PEN-3557S-MW3
00690	B4F110004-005	PEN-3557S-MW6
00691	B4F110004-006	PEN-3557S-MW6
00692	B4F110004-007	SB30A-1.5
00693	B4F110004-008	SB33A-1.5



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW2

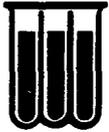
WO #: 00686
 LAB #: B4F110004-001
 MATRIX: WATER

DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13/94	4164014
Lead	14.0	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164014

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW2

WO #: 00686
LAB #: B4F110004-001
MATRIX: WATER

DATE SAMPLED: 6/10/94
DATE RECEIVED: 6/11/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	6/13/94	4164037

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

PEN-3557S-MW2

WO #: 00687
 LAB #: B4F110004-002
 MATRIX: WATER

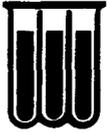
DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
- - DISSOLVED METALS - -						
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13/94	4164007
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13/94	4164007
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13- 6/14/94	4164007
Lead	ND	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164007

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW3

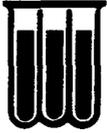
WO #: 00688
 LAB #: B4F110004-003
 MATRIX: WATER

DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

- - - - - REQUESTED METALS - - - - -

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13/94	4164014
Lead	14.5	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164014

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW3

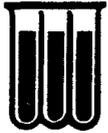
WO #: 00688
 LAB #: B4F110004-003
 MATRIX: WATER

DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

- - - - - INORGANIC ANALYTICAL REPORT - - - - -

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
		<u>LIMIT</u>	<u>UNIT</u>			
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	6/13/94	4164037

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW3

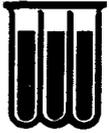
WO #: 00689
 LAB #: B4F110004-004
 MATRIX: WATER

DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
- - DISSOLVED METALS - -						
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13/94	4164007
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13/94	4164007
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13- 6/14/94	4164007
Lead	ND	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164007

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW6

WO #: 00690
 LAB #: B4F110004-005
 MATRIX: WATER

DATE SAMPLED: 6/10/94
 DATE RECEIVED: 6/11/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13- 6/14/94	4164014
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13/94	4164014
Lead	23.0	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164014

NOTE: AS RECEIVED

ND **NOT DETECTED AT THE STATED REPORTING LIMIT**



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

PEN-3557S-MW6

WO #: 00690
LAB #: B4F110004-005
MATRIX: WATER

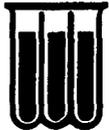
DATE SAMPLED: 6/10/94
DATE RECEIVED: 6/11/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	6/13/94	4164037

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/ALERT
Laboratories**

ABB ENVIRONMENTAL SERVICES

PEN-3557S-MW6

WO #: 00691
LAB #: B4F110004-006
MATRIX: WATER

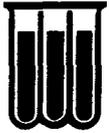
DATE SAMPLED: 6/10/94
DATE RECEIVED: 6/11/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
- - DISSOLVED METALS - -						
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13/94	4164007
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13/94	4164007
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13- 6/14/94	4164007
Lead	ND	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94	4164007

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

SB30A-1.5

WO #: 00692
LAB #: B4F110004-007
MATRIX: SOLID

DATE SAMPLED: 6/09/94
DATE RECEIVED: 6/11/94

- - - - - INORGANIC ANALYTICAL REPORT - - - - -

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u>		<u>QC</u>
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>	
Petroleum Hydrocarbons Total Recoverable	392	12.6	mg/kg	MCAWW 418.1 M	6/13- 6/14/94	4165065	
Solids, Total (TS)	79.6	1.0	%	MCAWW 160.3 M	6/14/94	4165079	

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT ABB ENVIRONMENTAL SERVICES
Laboratories

SB33A-1.5

WO #: 00693
LAB #: B4F110004-008
MATRIX: SOLID

DATE SAMPLED: 6/09/94
DATE RECEIVED: 6/11/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u>		<u>QC</u>
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>	
Petroleum Hydrocarbons Total Recoverable	81.2	5.6	mg/kg	MCAWW 418.1 M	6/13- 6/14/94	4165065	
Solids, Total (TS)	89.4	1.0	%	MCAWW 160.3 M	6/14/94	4165079	

NOTE: AS RECEIVED



ENSECO-WADSWORTH/ALERT
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/ALERT

Laboratory **QUALITY ASSURANCE / QUALITY CONTROL**
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



ENSECO-WADSWORTH/ALERT
 Laboratories QUALITY ASSURANCE / QUALITY CONTROL
 PROGRAM SUMMARY
 (cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	RPD	QC LIMITS RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.		accep. method perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

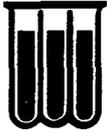
LAB #: B4F110004

METALS

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
		BATCH: 4164014			
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13/94
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13- 6/14/94
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13- 6/14/94
Lead	ND	5.0	ug/L	MCAWW 239.2	6/13/94

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4F110004

*** DISSOLVED METALS ***

----- METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
		BATCH: 4164007			
Arsenic	ND	5.0	ug/L	MCAWW 206.2	6/13- 6/14/94
Cadmium	ND	5.0	ug/L	MCAWW 200.7	6/13/94
Chromium	ND	50.0	ug/L	MCAWW 200.7	6/13/94
Lead	ND	5.0	ug/L	MCAWW 239.2	6/13- 6/14/94

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/ALERT
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4F140000-065

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons	ND	5.0	mg/kg	6/13- 6/14/94	4165065
Petroleum Hydrocarbons	ND	1.0	mg/L	6/13/94	4164037

NOTE:

ND (NONE DETECTED)



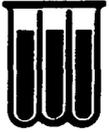
ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4F110004

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH: 4164014		
Arsenic	100	(71-119)	6/13/94
Cadmium	95	(80-113)	6/13- 6/14/94
Chromium	99	(79-120)	6/13- 6/14/94
Lead	108	(70-126)	6/13/94



ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4F110004

*** DISSOLVED METALS ***

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:4164007		
Arsenic	101	(71-119)	6/13- 6/14/94
Cadmium	106	(80-113)	6/13/94
Chromium	108	(79-120)	6/13/94
Lead	102	(70-126)	6/13- 6/14/94



ENSECO-WADSWORTH/ALERT
Laboratories

CHECK SAMPLE REPORT

LAB #: B4F110004

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons Total Recoverable	105	(63-111)	6/13- 6/14/94	4165065
Petroleum Hydrocarbons Total Recoverable	106	(69-125)	6/13/94	4164037

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB Project Name/Number: NADEP Pensacola 607NE
35579

Samples Received By: Carol McMulty Date Received: 6/11/94
(Signature)

Sample Evaluation Form By: Carol McMulty LAB No: _____
(Signature)

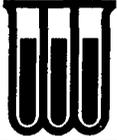
Type of shipping container samples received in? WAL Cooler X
Client Cooler _____ WAL Shipper _____ Box _____ Other _____

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<u>X</u>	_____
2. Were custody papers properly included with samples?	<u>X</u>	_____
3. Were custody papers properly filled out (ink, signed, match labels)?	<u>X</u>	_____
4. Did all bottles arrive in good condition (unbroken)?	<u>X</u>	_____
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<u>X</u>	_____
6. Were correct bottles used for the tests indicated?	<u>X</u>	_____
7. Were proper sample preservation techniques indicated?	<u>X</u>	_____
8. Were samples received within adequate holding time?	<u>X</u>	_____
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<u>X</u>	_____
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<u>X</u>	_____
11. Were samples accepted into the laboratory? (If no see comments)	<u>X</u>	_____

Cooler # _____ Temp 6 °C Cooler # _____ Temp 4 °C
Cooler # _____ Temp 4 °C Cooler # _____ Temp _____ °C

Comments: COC does not state which Metals requested
per quote As Cd Cr Pb



**WADSWORTH/ALERT
LABORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610

Chain of Custody Record

(813) 621-0784
Fax (813) 623-6021

Record _____ of _____
3571

Client		Project Name / Location			No Of CON- TAINERS	Parameter										Remarks	
Sampler(s)		Project #				VOC	PAH	METALS	TRPH	EDB							
Item #	Date	Time	MATRIX	Sample Location													
1	6-10-14	1615	H ₂ O	PLN-35575-MW2	3	1	1	1									
2	6-10-14	140	H ₂ O	PLN-35575-MW3	2	1	1	1									
3	6-10-14	1700	H ₂ O	PLN-35575-MW6	4	1	1	1									
4	6-1-14	1645	S.O.I	SE30A-1.5	1				1								
5	6-1-14	1650	S.O.I	SE30A-1.5	1				1								
6																	
7																	
8																	
9																	
10																	
11																	

Total Containers **11**

Number of Coolers in Shipment **0**

Bailers **0**

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Project Description Additional Comments:	1		Sampled / ACB	Chain of Custody		1600
	2					
	3					
	4					
	5					
	6					